Synthetic Rubber—Two Years After

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BUSINESS WEEK

A McGRAW-HILL PUBLICATION FIFTY CENTS SEPT. 7, 1957

FOUR CORNERS, U.S.A.: A barren waste in billion-dollar bloom. (Regions)

E B POWER GS BW
UNIVERSITY MICROFILMS
313 N 1ST ST
ANN ARBOR MICH

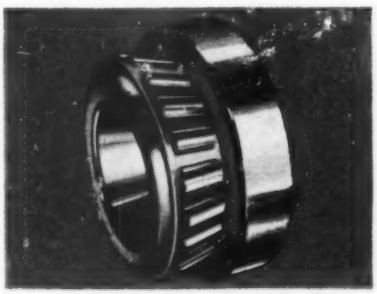
Harvest time is no time for maintenance!

No one knows the importance of proper timing better than a farmer. Equipment has to be ready *when it's needed*. One breakdown—like a bearing failure—and everybody loses. Lost crop . . . lost money . . . and, for the equipment manufacturer, a lost customer.

That's why so many farm equipment manufacturers insist on dependable Bower Roller Bearings. Basic design improvements like those shown at right have made bearing failure a rarity. In addition, Bower's use of quality material, plus close attention to engineering detail, has virtually eliminated all maintenance requirements—makes these rugged bearings last longer, perform better.

Whatever *your* product, specify Bower Roller Bearings. Choose from a complete line of tapered, straight and journal roller bearings for every field of transportation and industry.

BOWER ROLLER BEARING DIVISION
FEDERAL-MOGUL-BOWER BEARINGS, INC. • DETROIT 14, MICHIGAN



ADVANCED SPHER-O-HONED DESIGN REDUCES WEAR

Spherically generated roll heads • Higher flange with larger two-zone contact • Larger oil groove • Honed races.

SPHER-O-HONED

BOWER ROLLER BEARINGS

GENERAL BUSINESS

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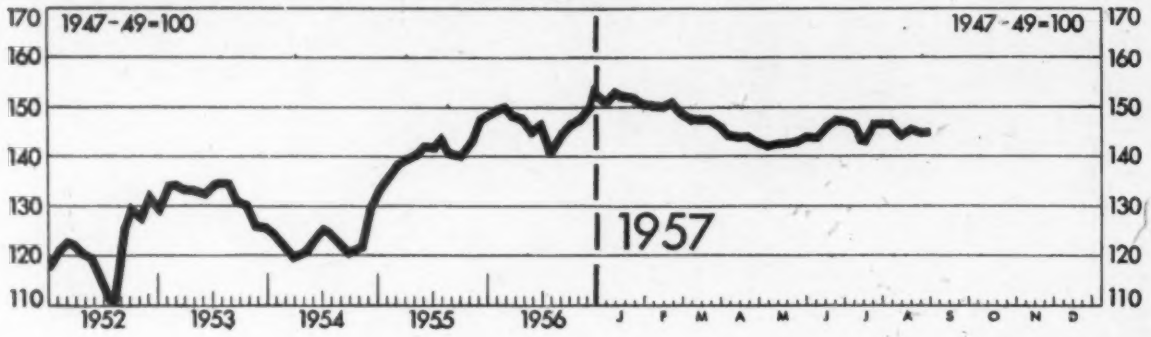
FIGURES OF THE WEEK



	1946 Average	Year Ago	Month Ago	Week Ago	§ Latest Week
BUSINESS WEEK INDEX (chart)	**91.6**	**146.0**	**147.4**	**†145.5**	***145.7**
PRODUCTION					
Steel ingot (thous. of tons)	1,281	2,429	2,043	†2,103	**2,116**
Automobiles and trucks	62,880	77,371	140,253	†149,867	**143,819**
Engineering const. awards (Eng. News-Rec. 4-wk daily av. in thous.)	$17,083	$62,611	$61,638	$58,517	**$61,751**
Electric power (millions of kilowatt-hours)	4,238	11,565	12,474	12,023	**12,147**
Crude oil and condensate (daily av., thous. of bbls.)	4,751	7,108	6,843	6,789	**6,766**
Bituminous coal (daily av., thous. of tons)	1,745	1,638	1,668	1,600	**1,647**
Paperboard (tons)	167,269	274,069	282,952	289,054	**290,919**
TRADE					
Carloadings: miscellaneous and l.c.l. (daily av., thous. of cars)	82	72	64	68	**70**
Carloadings: all others (daily av., thous. of cars)	53	56	58	57	**56**
Department store sales index (1947-49 = 100, not seasonally adjusted)	90	120	101	115	**121**
Business failures (Dun & Bradstreet, number)	22	237	281	260	**262**
PRICES					
Spot commodities, daily index (Moody's, Dec. 31, 1931 = 100)	311.9	425.6	430.0	420.7	**417.4**
Industrial raw materials, daily index (BLS, 1947-49 = 100)	††73.2	97.5	92.8	91.5	**91.0**
Foodstuffs, daily index (BLS, 1947-49 = 100)	††75.4	81.5	86.4	84.4	**84.4**
Print cloth (spot and nearby, yd.)	17.5¢	18.6¢	17.9¢	17.9¢	**17.9¢**
Finished steel, index (BLS, 1947-49 = 100)	††76.4	168.6	181.5	181.5	**181.5**
Scrap steel composite (Iron Age, ton)	$20.27	$58.50	$53.83	$51.50	**$50.17**
Copper (electrolytic, delivered price, E & MJ, lb.)	14.045¢	39.944¢	28.905¢	28.315¢	**27.625¢**
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	$1.97	$2.23	$2.13	$2.13	**$2.11**
Cotton, daily price (middling, 1 in., 14 designated markets, lb.)	**30.56¢	33.03¢	33.86¢	33.48¢	**33.39¢**
Wool tops (Boston, lb.)	$1.51	$1.85	$2.22	$2.22	#
FINANCE					
500 stocks composite, price index (S&P's, 1941-43=10)	17.08	47.59	47.29	44.56	**45.04**
Medium grade corporate bond yield (Baa issues, Moody's)	3.05%	3.99%	4.77%	4.86%	**4.89%**
Prime commercial paper, 4 to 6 months, N. Y. City (prevailing rate)	¾-1%	3⅛%	3⅞%	4%	**4%**
BANKING (Millions of Dollars)					
Demand deposits adjusted, reporting member banks	††45,820	55,381	55,550	54,482	**54,974**
Total loans and investments, reporting member banks	††71,916	85,541	†86,365	86,973	**86,489**
Commercial and agricultural loans, reporting member banks	††9,299	29,168	31,738	32,217	**32,009**
U. S. gov't guaranteed obligations held, reporting member banks	††49,879	26,576	25,241	25,303	**24,941**
Total federal reserve credit outstanding	23,888	25,404	24,932	25,211	**25,133**

MONTHLY FIGURES OF THE WEEK		1946 Average	Year Ago	Month Ago	Latest Month
Private expenditures for new construction (in millions)	**August**	$803	$3,122	$3,039	**$3,101**
Public expenditures for new construction (in millions)	**August**	$197	$1,352	$1,356	**$1,490**
Manufacturers' inventories (seasonally adjusted, in billions)	**July**	$21.3	$50.9	$53.9	**$54.1**
Consumer credit outstanding (in millions)	**July**	$6,704	$39,478	$42,245	**$42,365**
Installment credit outstanding (in millions)	**July**	$3,174	$30,297	$32,344	**$32,699**

* *Preliminary, week ended August 31, 1957.*
† *Revised.*
†† *Estimate.*
** *Ten designated markets, middling ⅞ in.*
§ *Date for 'Latest Week' on each series on request.*
# *Insufficient trading to establish a price.*

THE PICTURES—American Arbitration Assn.—174; Bell Syndicate—162; Bert Brandt—120; British Information Services—118; Grant Compton—48, 49, 50; Food Machinery & Chemical Corp.—193 (cen.); I.N.P.—32, 171, 200; Herb Kratovil—cover, 88, 89, 93, 94, 98; Link-Belt Speeder Corp.—193 (top); Gene Miller—142 (top), 143 (top), 146; Sovfoto—30 (rt.); Joan Sydlow—154, 157; U.P.—30 (lt.); U. S. Navy—142 (bot.), 143 (bot. lt. & rt.); Westinghouse—193 (bot.); W.W.—23, 28.

"VISION IS INDISPENSABLE TO PROGRESS"

How "sound" you can't hear may wash your clothes in 1970

Flick a switch and your whole house is an "appliance"! This is the promise of an era that is developing astounding new products to improve housekeeping convenience and comfort.

In the future, your laundry may be washed by inaudible vibrations that literally shake dirt particles out of clothing. Pure, dust-free air will be circulated throughout homes warmed and cooled by "heat pumps" that use the earth's atmosphere as a source of heat and cold. Speedy electronic ovens, already coming into use, will be coordinated with automatic food preparation from frozen supplies to be served on automatically molded, disposable dishes.

In the realm of future possibility—your morning newspaper reproduced at your breakfast table—three dimensional color TV—closed-circuit household TV performing useful functions such as watching over the children.

Discovering, improving, creating—industry is impelled toward greater attainments in our stimulating climate of economic freedom.

At Bankers Trust we are supplying financial services that implement the development of modern appliances and other advanced products. Our wide range of experience could, perhaps, be applied with advantage by *your* company.

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Wausau Story

AT THE ST. LAWRENCE SEAWAY AND POWER PROJECT

OPENING up this waterway to deep-depth navigation is one of the biggest jobs ever tackled. You've heard a lot about it. But unless you're working on the job, you probably haven't heard that history's being made here in terms of speed *and safety.*

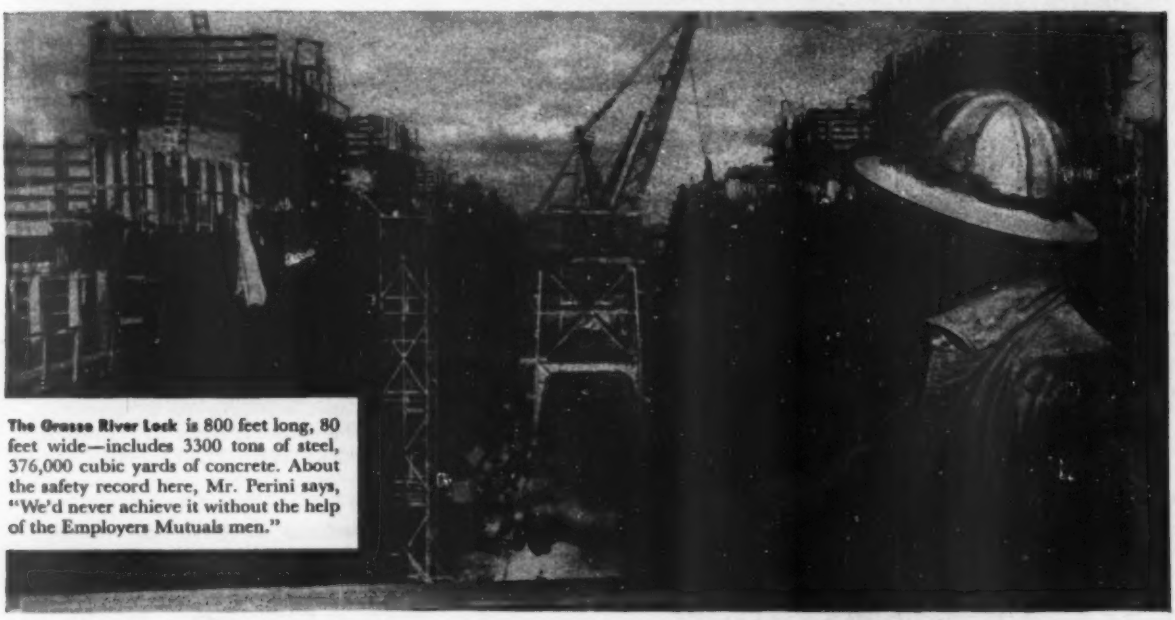
Near Massena, New York—at the eastern end of what will be the 10-mile Long Sault Canal—the Grasse River Lock is being built. Fast! The Perini Corporation, heading a joint venture group, had a field office set up the day after the contract was awarded. Three days later, dozers were digging out access roads. Within four months, a concrete mixing plant had been dismantled and shipped up from Florida, rebuilt for this project, and the first concrete was poured.

Rush production like this and what happens to safety? Another record!...because the safety men kept pace with the construction activity. Employers Mutuals men went right to work with Perini officials and its employee representatives. Together they *pre-planned* a program of safety and safety consciousness. Look at the result: 1,400,000 man-hours and only 10 lost-time accidents. That's 5 times better than the average for heavy construction jobs.

To build a safety record like that requires experience, teamwork too. Both are part of what construction people recognize as the Wausau Way of working.

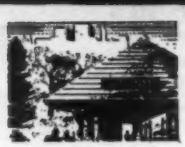
Mr. Lou Perini (center), President of the Perini Corporation and Employers Mutuals Otto Holmskog (left) talk to Ivan Duprey, one of the 8 craft stewards who see that all safety measures are observed. That double ladder in the picture at the right prevents dangerous passing. It's one of the "built-in" ways of making this job record-safe.

Employers Mutuals, with offices across the country, are one of the largest in the field of workmen's compensation. We also write all lines of fire and casualty insurance. For further information see your nearest representative (consult your telephone directory) or write to us in Wausau, Wis.



The Grasse River Lock is 800 feet long, 80 feet wide—includes 3300 tons of steel, 376,000 cubic yards of concrete. About the safety record here, Mr. Perini says, "We'd never achieve it without the help of the Employers Mutuals men."

Employers Mutuals *of* Wausau



"Good people to do business with"

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READERS REPORT

Well Done

Dear Sir:

Congratulations on your article, NLRB Sustains Rights of Union Members [BW—Aug.10'57,p125]. In those two pages you succeeded in turning the searchlight on an area of the Labor Management Relations Act which is often overlooked and sometimes forgotten. I refer to that part of the Act's Declaration of Policy which states: "It is the purpose and policy of this Act . . . to protect the rights of individual employees in their relations with labor organizations whose activities affect commerce."

BOYD LEEDOM
CHAIRMAN
NATIONAL LABOR RELATIONS BOARD
WASHINGTON, D. C.

Dear Sir:

I have read with a great deal of interest your reports of the Subcommittee on Antitrust and Monopoly hearings on steel and I have particular reference to the article of August 17th.

I just want to say that the subject matter is presented objectively and intelligently and to thank you for the very fair analysis of the hearing.

ESTES KEFAUVER
UNITED STATES SENATE
WASHINGTON, D. C.

Dear Sir:

I want to compliment you on your thorough and understanding report on plastics distribution and Cadillac Plastic & Chemical Company. It is rare to find someone outside the plastics industry who shows so much understanding of our industry's problems. . . .

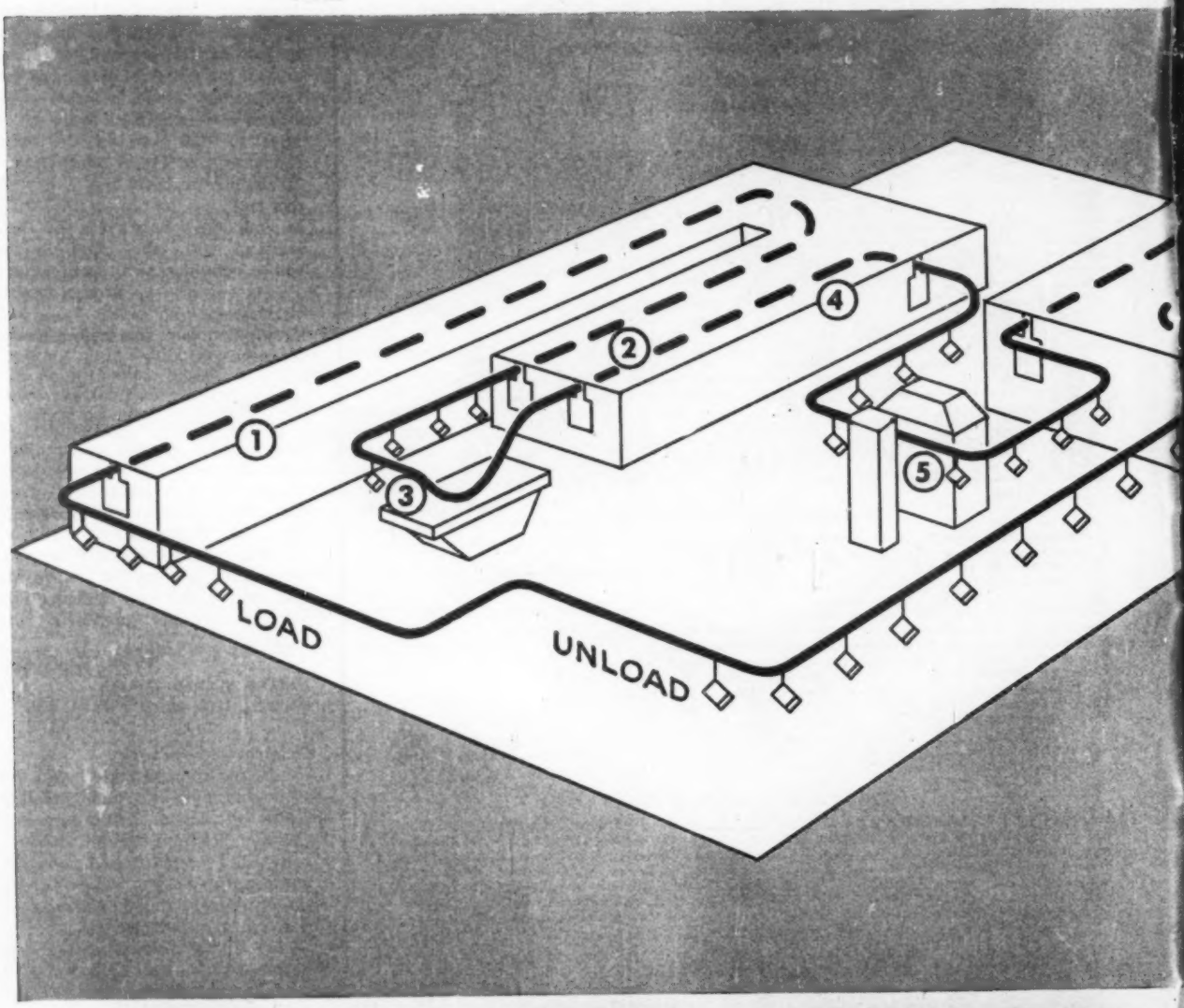
ROBERT B. JACOB
PRESIDENT
CADILLAC PLASTIC & CHEMICAL CO.
DETROIT, MICH.

French Business Women

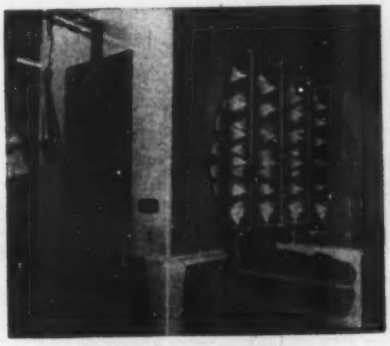
Dear Sir:

In your story European Women Who Handle Businesses [BW—Jun. 8'57,p122] you printed photographs of our Congress. From the papers which were presented by the French delegation, if you're interested in pursuing the subject, you would see that there are mistaken impressions current in the U. S. about the position of the woman in France. Foremost among them is the lack of knowledge of the real

DeVilbiss announces a New and



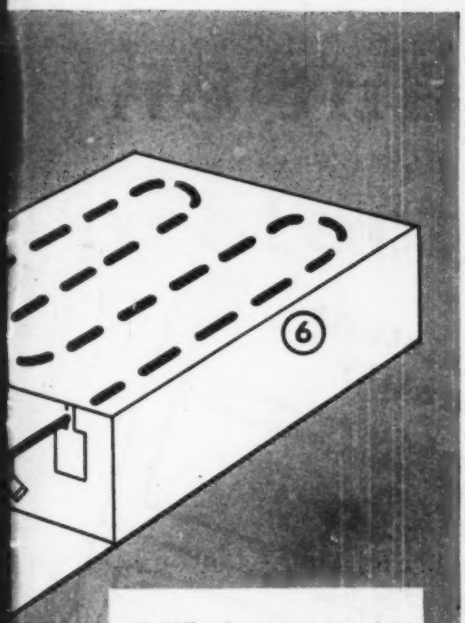
NEW! Industrial Ovens



NEW! Parts Washers

NEW! Multi-Stage Metal-Treating Units

expanded line of finishing equipment



DeVilbiss' experience in the design, manufacture, and installation of systems like this, means you save in cost and operation; benefit in performance and product quality.

1. Phosphatizing Unit
2. Dry-off Oven
3. Dip Tank
4. Prime Coat Bake Oven
5. Automatic Spray Machine
6. Finish Coat Bake Oven

Now, through its new subsidiary—Newcomb-Detroit Company—DeVilbiss emerges as the only "one-source" company that designs, manufactures and installs complete painting systems for all major types of finishing operations.

WHATEVER you manufacture—giant aircraft or miniature lamp filaments—now you can get *all* your coating and finishing equipment from a single company . . . DeVilbiss!

Supplementing its complete line of spray equipment, DeVilbiss now offers industrial ovens; flo-coaters and dip-coaters; automatic washers for parts cleaning, metal treating, and spray pickling; dust collectors for grinding, polishing, and metal-finishing operations; and complete systems, custom-designed or built-up from standardized components.

These facilities offer important advantages to you: one-source responsibility for product quality, performance, operational efficiency; matched equipment for fully integrated systems; and individual finishing units backed by diversified design and manufacturing experience.

Engineering, installation and service facilities are available from coast to coast. So when planning to build, expand or remodel your finishing system—or replace any component in your present operation —call in DeVilbiss.

FOR BETTER SERVICE, BUY
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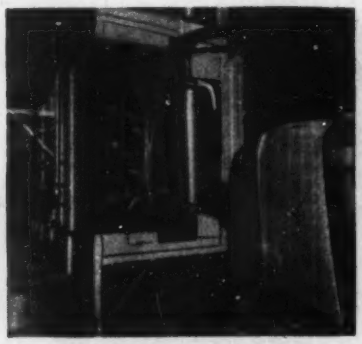
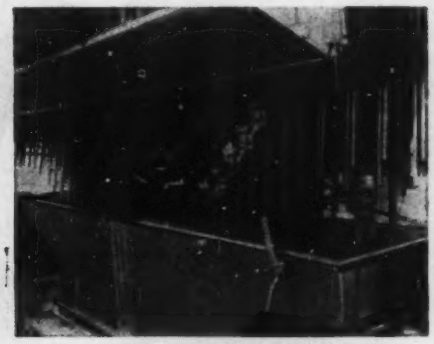
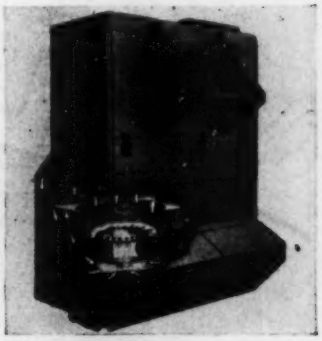


NEW! **Flo-Coaters**



NEW! **Dip-Coaters**



NEW! **Dust Collectors**

Count on

Synchronized Scheduling

. . . on-time deliveries coordinated with your requirements to keep inventories at an optimum level.

Consistent Quality

. . . purity matched to your specifications to permit greater standardization of your process.

Multi-plant Availability

. . . reliable shipments in spite of local or seasonal shortages or other emergencies.

Sales Service

. . . specialized customer service that supervises operations, expedites orders, and contributes to the smooth flow of your operations.

Technical Assistance

. . . practical assistance to help you handle and use chemicals to best advantage.

these dividends to protect your profit

Your profit figure doesn't explain itself. If your net isn't as large as it should be, you might take a close look at your less obvious cost factors. The kind of service you are getting from a major supplier may be undermining profits.

Now is the time to talk to an Olin Mathieson representative. Let him show you how multi-plant facilities and modern chemical marketing combine to give the extra dividends of competent chemical supply service.

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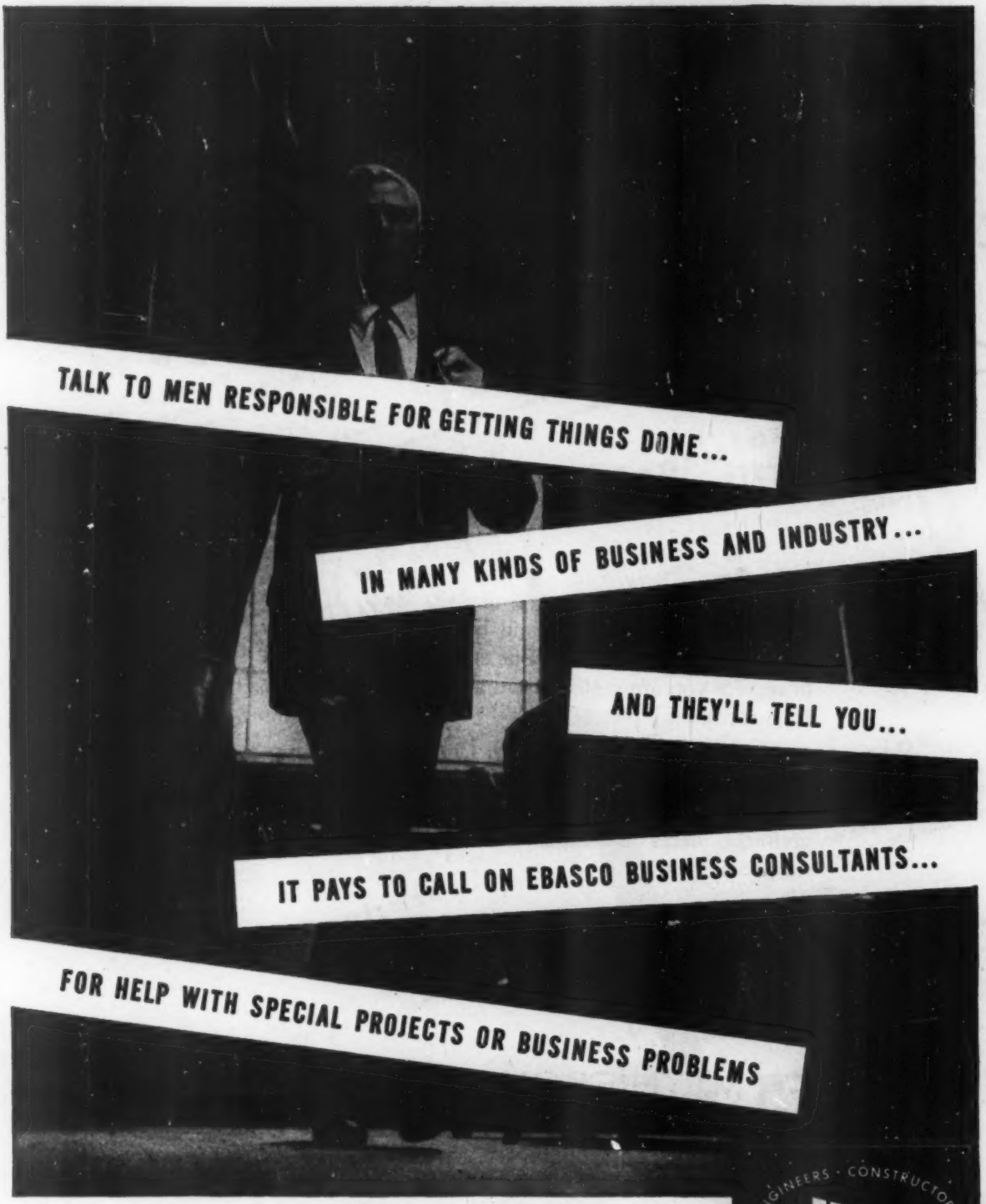
OLIN MATHIESON CHEMICAL CORPORATION

INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

INORGANICS: Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Hydrazine and Derivatives • Hypochlorite Products Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sulfate of Alumina • Sulfur (Processed) • Sulfuric Acid • **ORGANICS:** Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether • Formaldehyde • Methanol • Sodium Methylate Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorophenol • Surfactants


TALK TO MEN RESPONSIBLE FOR GETTING THINGS DONE...
IN MANY KINDS OF BUSINESS AND INDUSTRY...
AND THEY'LL TELL YOU...
IT PAYS TO CALL ON EBASCO BUSINESS CONSULTANTS...
FOR HELP WITH SPECIAL PROJECTS OR BUSINESS PROBLEMS

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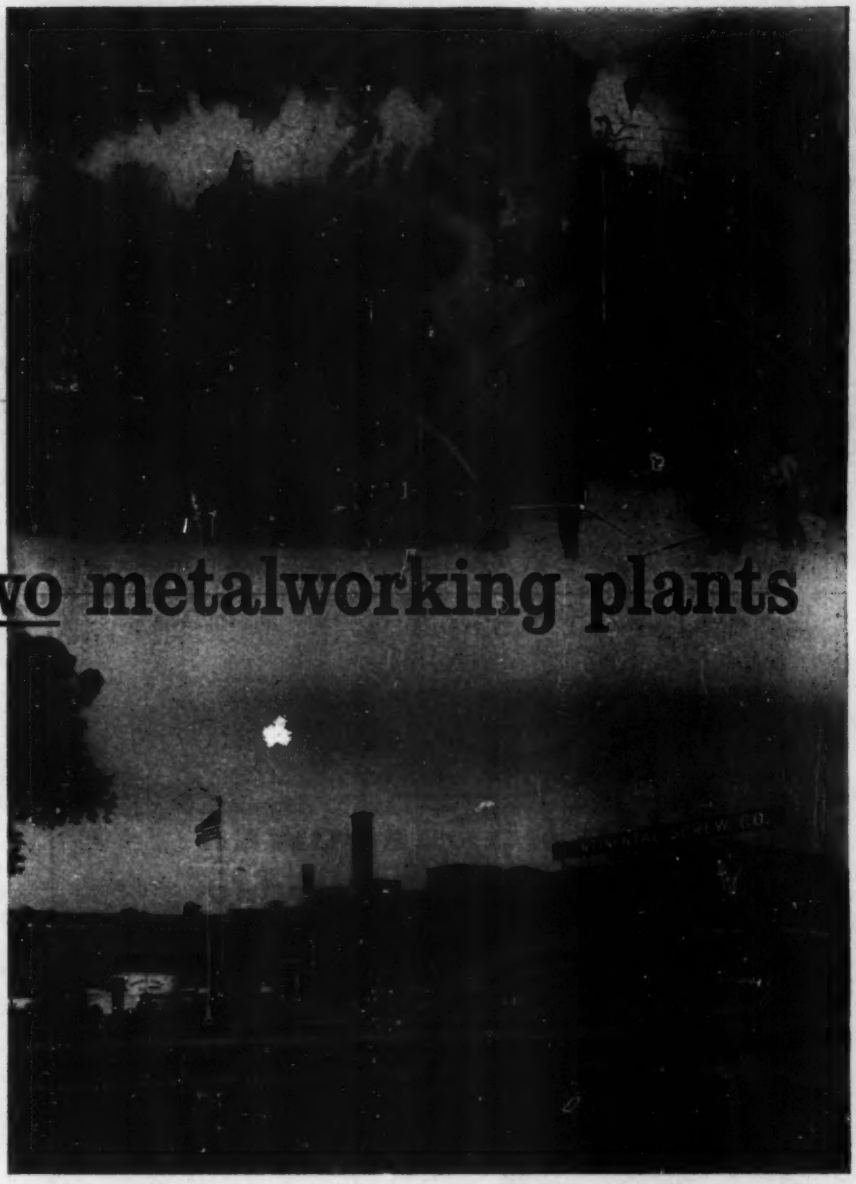


Dollars Burned

Fire which originated in bronze room of this unsprinklered machine shop spread out of control before apparatus arrived. Flames shot beneath roof to all parts of the 30,000 sq. ft., brick, wood-joisted structure, then jumped to dwellings nearby. Total damage: $593,500.

Fire in two metalworking plants

Dollars Saved

Flash fire occurred at the Continental Screw Co., New Bedford, Mass. when hot welding flux dropped through a duct hole into wooden containers of oil-covered screws on the floor below. Oil ignited and flared menacingly. Two Grinnell Sprinklers opened automatically and put out fire.

Last year, almost a billion dollars went up in smoke. Insurance, of course, restored many of those dollars. But restoring the businesses involved is another thing! Statistics show that 2 businesses out of every 5 having a serious fire never came back. The reason? . . . rebuilding, restocking and restaffing costs never were so high!

That's why more and more businessmen are turning to insurance against fire that's *100% automatic* . . . Grinnell Automatic Sprinklers. Grinnell Sprinklers stop fire anytime, any place . . . wherever it may strike, night or day.

Grinnell Sprinklers can not only save your business, they can save you dollars—through reductions in fire insurance premiums of between 50 to 90%. And when tied in with a Central Station Supervisory Service, the elimination of costly (and sometimes uncertain) services of a watchman is possible.

Without cost or obligation, ask a Grinnell engineer to survey your property and submit a cost estimate. Write to: Grinnell Company, Inc., 265 West Exchange Street, Providence, Rhode Island.

GRINNELL

PROTECTION AGAINST EVERY FIRE HAZARD

MANUFACTURING ENGINEERS AND INSTALLERS OF FIRE PROTECTION SYSTEMS SINCE 1850

Army tank ventilating blower motor.

WINNING HORSEPOWER

for your motor-driven product

With a Lamb Electric *specially engineered* motor you obtain the motor qualities which are important in winning acceptance for your product.

Exceptional performance and dependability are standard with Lamb Electric Motors, at no increase in cost, because they are "custom tailored" by personnel having many years of experience in this field.

May we demonstrate these advantages for *your* new and redesigned products?

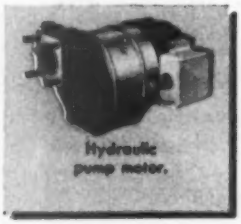
THE LAMB ELECTRIC COMPANY • KENT, OHIO

A Division of American Machine and Metals, Inc.

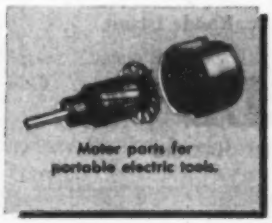
In Canada: Lamb Electric — Division of Sangamo Company Ltd. — Leaside, Ontario

Lamb Electric

SPECIAL APPLICATION FRACTIONAL HORSEPOWER **MOTORS**



Hydraulic pump motor.



Motor parts for portable electric tools.

Aircraft pressurizing pump motor.

place occupied by businesswomen in French life.

Perhaps your readers would be interested in an exposition of it, which we can furnish to those who are interested.

MME. YV. EDMOND FOINANT
PRESIDENT
LES FEMMES CHEFS D'ENTREPRISE EUROPEENES
PARIS, FRANCE

Template Pioneers

Dear Sir:

In your New Products section [BW—Aug.3'57,p67] reference was made to the installation of a Template camera at Convair by a competitor of ours.

While we have no doubt that this is a new product for our competitor, we would like to point out that some 27 Template cameras have been placed in operation in this country and the British Isles since 1944 when the Lanston Monotype division of this company designed and installed the first Template camera.

Of the 27 cameras in use, 21 have been made by this company, the balance by three competitors. Among the long standing users of Lanston Template cameras are Boeing (5 cameras) Douglas, General Motors, Lockheed, North American Aviation, Grumann and many others.

BERNARD FEIN
PRESIDENT
LANSTON INDUSTRIES, INC.
NEW YORK, N. Y.

Turpentine Needed

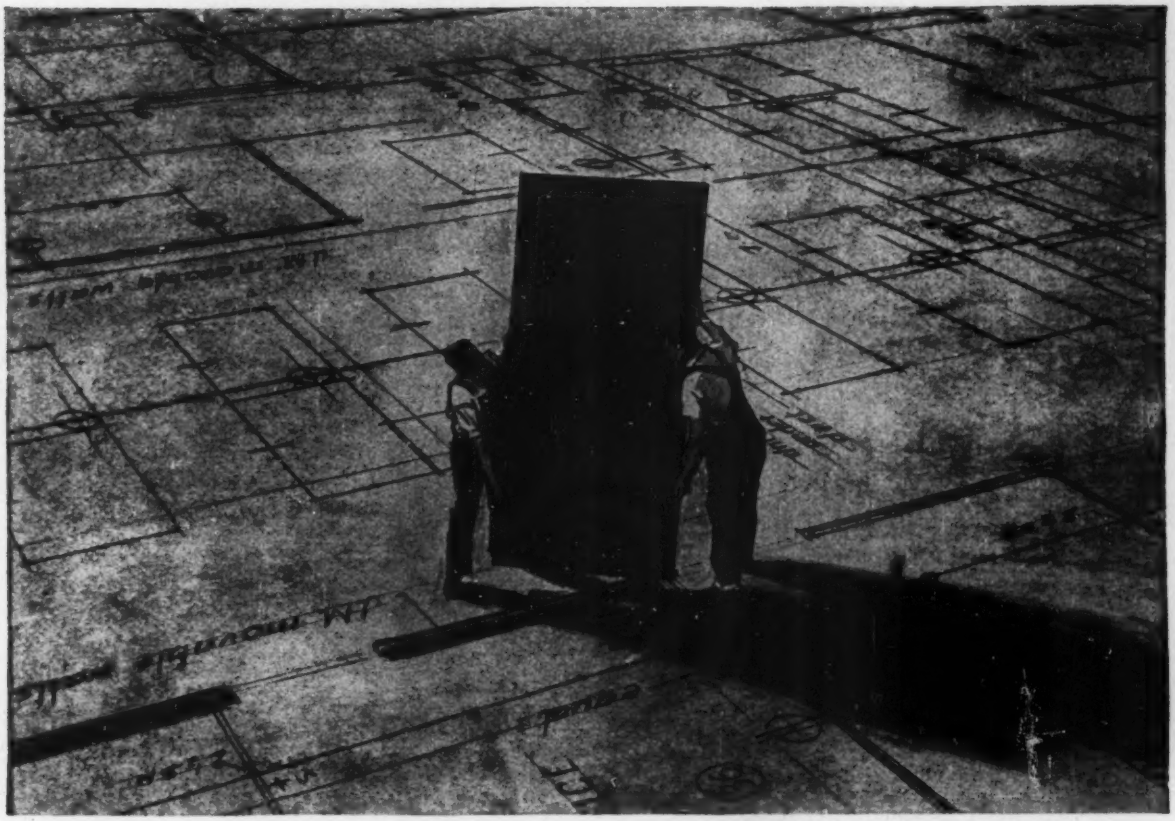
Dear Sir:

The guy who did Dynamic Detroit Loses Some of Its Steam [BW—Aug.17'57,p156] deserves a pat on the back for his very revealing article.

Maybe it'll sprinkle a little turpentine on the tails of our civic leaders and rouse them from their hopped-up self-imposed lethargy. I hope. . . .

H. J. BRACHMAN
REAL ESTATE COUNSEL & TAX CONSULTANT
DETROIT, MICH.

Letters should be addressed to Readers Report Editor, BUSINESS WEEK, 330 West 42nd Street, New York 36, N. Y.



How to make your space *fit* your needs

Johns-Manville Asbestos Movable Walls can be quickly changed at will

You can make your offices *completely flexible* with J-M Asbestos Movable Walls. They are readily movable, yet have the stability and appearance of permanent and solid wall construction.

Johns-Manville Movable Walls can be erected, disassembled and relocated time and again—wherever a change in space is required. This time-saving and money-saving flexibility permits quick and economical alterations in size, arrangement or type of layout.

J-M Movable Walls are prefinished in stippled, textured colors of light green, light tan and light gray, with other solid colors available on order. Their hard, tough finish is scratch and stain resistant. These walls lend dignity and beauty to any type of office interior.

Made of asbestos and cement J-M Movable Walls are strong, rotproof and long lasting. Wall changes can often be made in a few days or during a weekend. You save construction dollars. For *free* brochure "Asbestos Movable Walls," write Johns-Manville, Box 158, New York 17, N. Y. In Canada, write 565 Lakeshore Rd. E., Port Credit, Ontario.

Johns-Manville flush or glazed partitions are furnished and erected by J-M's own Construction Department, complete with doors, door hardware, glass and trim.

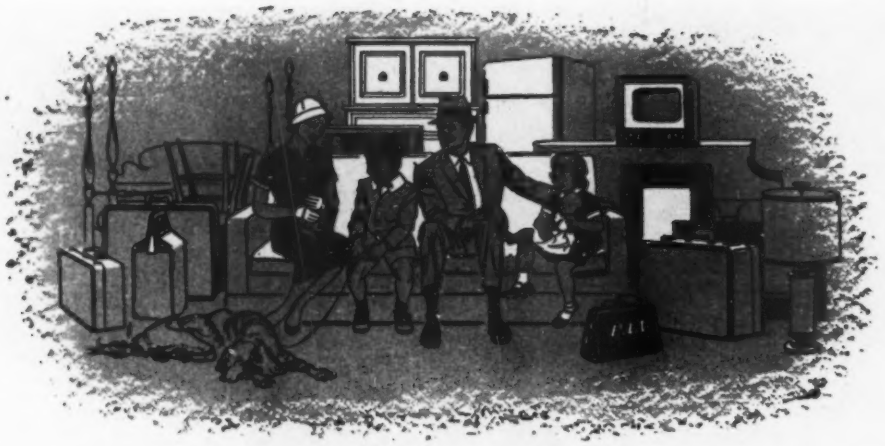
THE AMERICAN INSTITUTE OF ARCHITECTS 1857-1957

Johns-Manville congratulates the American Institute of Architects on its 100th Anniversary.

—Consult an architect—use quality materials.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville



Clipper Cargo saved $546.80 and 26 days

The company moved the man *up* in the organization by moving him *over* to Germany . . . *shipped his family's household goods by air instead of sea—and saved:*

73% on packing and crating
95% on insurance
33% on delivery at destination
87% on charges at port of arrival

This is the kind of savings air cargo now makes possible! For the plain fact is, when you ship by sea, freight charges may be only 10% of the total cost. There are "hidden charges" you don't even think about—until you get the bill.

But now the Pan Am Cost Comparison Plan gives you the *whole* story—*in advance.* You can compare *total* costs, sea versus air, and prove the savings that can be made by air cargo.

And when you ship by *Clipper* Cargo,* you pay the *minimum* prescribed rates. *Yet you get three big Pan Am advantages:*

1. FASTEST DELIVERY TO ALL THE WORLD. No other airline can match Pan Am's number of direct international flights from the U. S.

2. THE WORLD'S MOST MODERN AIR FLEET. Pressurized and temperature-controlled planes are available for "delicate" cargo.

3. "DOORSTEP" SERVICE FROM ANYWHERE IN THE U. S. Just contact PAA, your cargo agent, forwarder or local airline.

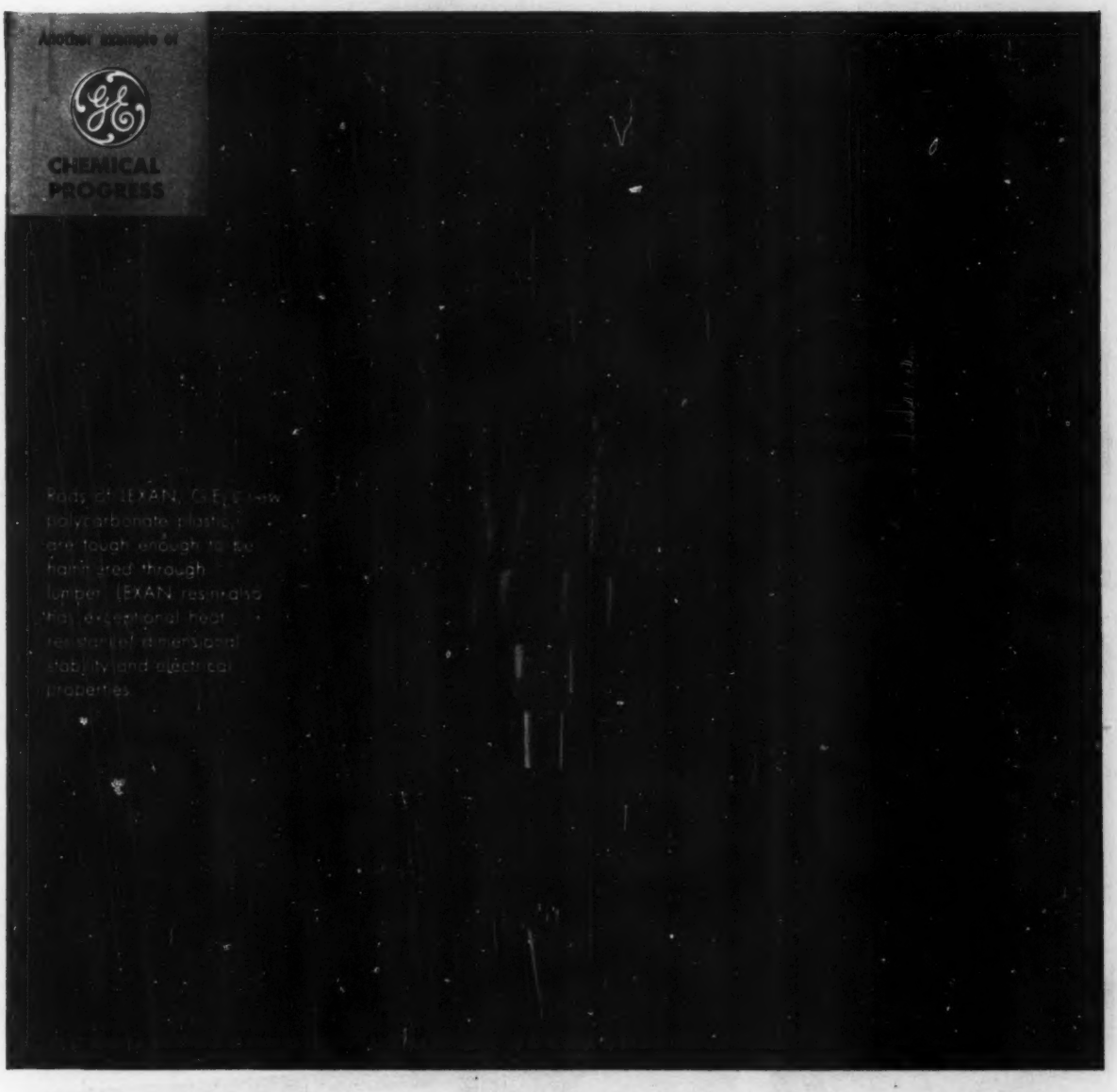
• • •

Want to hear more about the Pan Am Cost Comparison Plan? Just phone Pan Am—or write L. P. Cornwall, Clipper Cargo Sales Mgr., P. O. Box 1790, New York 17, N. Y., for the free booklet, "There's Profit in the *Air.*"

PAN AM CLIPPER CARGO

FASTEST DELIVERY TO ALL THE WORLD

*Trade Mark, Reg. U. S. Pat. Off.



Develops LEXAN plastic tough enough to be hammered through a plank

General Electric has developed a new plastic tough enough to replace cast metals in many applications. Called LEXAN® polycarbonate resin, the new thermoplastic has such high impact strength that parts molded of it can withstand hammer blows without breaking.

LEXAN resin has a hard, smooth surface and can be made in transparent and opaque colors. It resists heat and mechanical stress well, and has excellent electrical properties. In preliminary tests, LEXAN resin has shown promise in such applications as coil forms, structural and insulating parts, gears and appliance components. In many cases, one part molded of the new plastic is able to replace an assembly of several parts made from conventional materials.

LEXAN resin joins a growing list of G.E. chemical discoveries...a list that includes many of the new silicones, electrical insulating materials, and phenolic molding and coating resins. LEXAN resin is not yet available for field evaluation; the limited quantities now being produced are being used in a controlled testing program. For preliminary information on LEXAN resin, write Dept. CDD, CHEMICAL and METALLURGICAL DIVISION, General Electric Company, Pittsfield, Mass.

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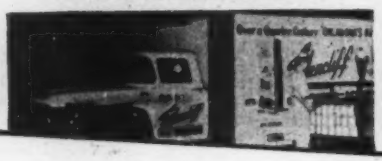
GENERAL ELECTRIC

GASOLINE TRANSPORT COMPANY
LOUISVILLE, KENTUCKY

SACCANI DISTRIBUTING COMPANY
SACRAMENTO, CALIFORNIA

H. W. LAY & COMPANY, INC.
TAMPA, FLORIDA



The Big Fleets buy more than any other Ford Trucks cost less!

**Official truck registration data for the past two years shows that owners of America's biggest commercial truck fleets have bought more Ford trucks than any other make*

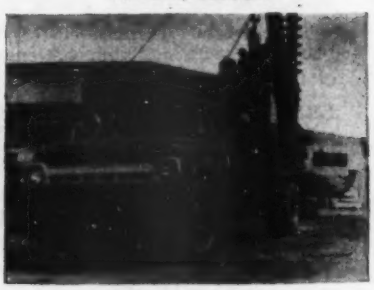
PURETA SAUSAGE COMPANY
SACRAMENTO, CALIFORNIA

GLASSCOCK BROTHERS
LITCHFIELD, KENTUCKY

FLUHRER BAKERIES
MEDFORD, OREGON

PIONEER ICE CREAM DIVISION,
THE BORDEN COMPANY, BROOKLYN, N.Y.

HUNTER PACKING COMPANY
EAST ST. LOUIS, ILLINOIS



A. TEICHERT & SON, INC.
SACRAMENTO, CALIFORNIA

POWELL BROTHERS TRUCK LINES, INC.
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STEVE WILSON, WHITE CITY, OREGON

WM. B. MORSE LUMBER CO.
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FORD TRUCKS make!*

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LESS TO RUN

LAST LONGER, TOO!

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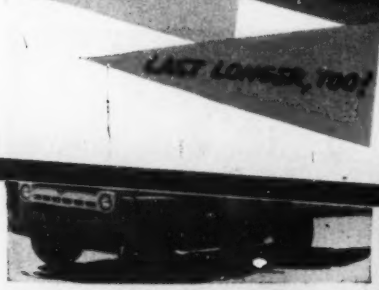
NEW YORK CITY, NEW YORK

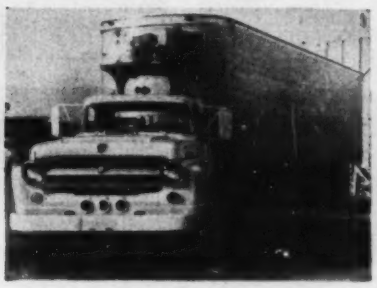


CITY OF RIVER OAKS, TEXAS

HIMES BROTHERS DAIRY, DAYTON, OHIO

WESTCHESTER COUNTY
VALHALLA, NEW YORK

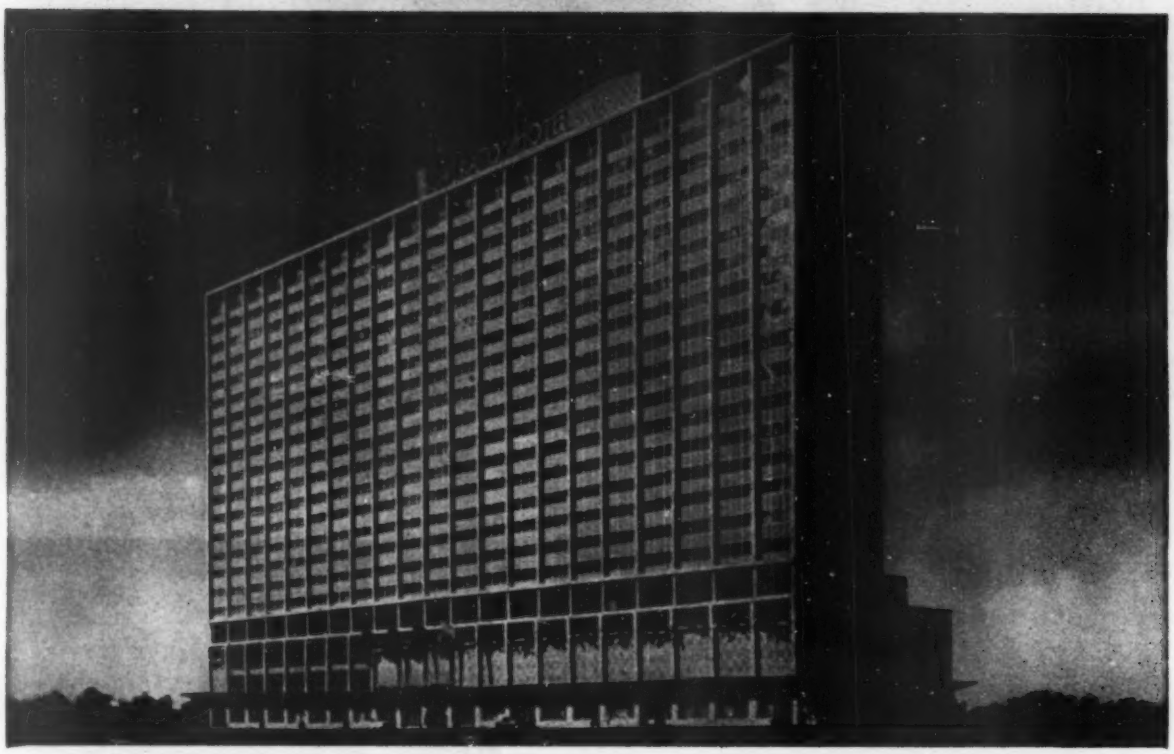
7-UP BOTTLING COMPANY OF
TAMPA, FLORIDA



PATTI-BONO, DELANO, CALIFORNIA

SUBURBAN PROPANE CORPORATION
WHIPPANY, NEW JERSEY

HOW HERCULES HELPS...



ADD COLOR TO THE PHILADELPHIA SHERATON—Lobbies, corridors, and public rooms of this newest addition to America's distinguished hotels are decorated with "Tweed," Raffi & Swanson's multicolor lacquer*. Multicolor coatings based upon Hercules® nitrocellulose add a touch of decorative beauty wherever applied, yet are extremely durable and easily cleaned. Architects and decorators are finding multicolor lacquers add variety to a wide range of interior surfaces.

*U. S. Patent No. 2,591,904 held by Colorunic Coatings, Inc., Los Angeles.

HANDLOADERS—Hercules® smokeless powder for handloading, available in five grades, provides the ultimate in ballistic performance for the do-it-yourself shooter.

MAKE PAINT GO FURTHER—Hercules® Steam Distilled Wood Turpentine, a dependable thinner on the market for more than 30 years, keys paint to the surface, makes it less liable to crack or scale. Available everywhere in pint, quart, gallon, and 5-gallon orange and black cans.

HERCULES POWDER COMPANY
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900 Market St., Wilmington 99, Del. Sales Offices in Principal Cities

HERCULES

CHEMICAL MATERIALS FOR INDUSTRY

G57-7

BUSINESS OUTLOOK

Autos and steel will set the tone of the autumn business upturn.

Of this fact, there is little doubt in anybody's mind. But whether the upturn will be as vigorous as it was last fall—or whether it will even measure up to the seasonal norm—remains the vital question.

Present estimates of fourth-quarter steel operations are relatively conservative—between 85% and 90% of capacity.

This indicates weekly output of between 2,200,000 and 2,345,000 tons of ingot. During the same period last year, the average weekly rate of production was about 2,475,000 tons.

Thus, unless the industry is pleasantly surprised by demand for its products, **output will continue to lag behind last year.**

Auto makers are somewhat more optimistic than steelmen.

They've apparently set their sights on production of 1,560,000 new cars in this year's fourth quarter. That would be almost exactly **the same as their production in the final three months of 1956.**

High level production in the auto industry—and certainly anything over 1½-million cars in the fourth quarter would be very good—**can do a great deal for business generally.**

New York's First National City Bank's monthly letter put it this way:

"Such is the importance of this industry that a successful reception of the 1958 models would undoubtedly have a powerful tonic effect upon the whole economy."

Perhaps when automotive demand really begins to make itself felt, **steel operations will do better than most people now expect.**

When the auto plants buy, other users of raw materials begin to worry about being frozen out. New orders—not just for steel, but for many things—often turn up briskly when Detroit is on the prowl.

—•—

Auto production so far this year is more than 300,000 ahead of 1956. The outturn has been roundly 4,370,000 for the first eight months against 4,040,000 for the same period last year.

That assures a good gain for the calendar year. In fact, 1957 should top 1953's 6,120,000 cars to become **the third best year in auto history** (trailing 1955's 7.9 million and 1950's 6⅔-million).

August's auto production, in particular, ran fairly well ahead of what most observers outside the industry had expected.

There had been a suspicion that Detroit would brake down a bit to help dealers manage stocks. But this was not the case. The month's output was about 520,000 cars, a small gain over July and 120,000 above last year (when Detroit was really worried about the old-model cleanup).

Sustained production at a 6-million-a-year rate from May through August **has helped over-all business** during its relatively dull spell. And it has been good for employment (the number of workers drawing unemployment compensation in Michigan being 30% under a year ago).

But it once again highlighted the problem of **dealer inventories.**

Trade reports put the end-of-August stock of new cars somewhere between 750,000 and 800,000. This would be close to the year's high and some 250,000 more than at this time last year.

The hope is that no more than 200,000 1957 models will be around come November. But obviously there's quite a selling job to be done.

Sales of new autos so far this year haven't kept up with output.

Through July, the last month for which fairly complete figures are available, **registrations were no higher than the year before** while output was 200,000 higher. And the gap doubtless widened a bit in August.

Nevertheless, a 6-million-car sales year still seems likely. And that would fall only about 200,000 short of prospective output.

In years past, auto production only 200,000 in excess of domestic sales would barely have taken care of exports. This year, however, **imports are likely to be as large as exports,** so the 200,000 looks like surplus (or, if you like, addition to stocks).

—•—

Cars cost more and consumers have been borrowing more money than ever before to help pay for them (even though retail sales, in units, no more than equal year-ago totals).

Installment loans extended to car buyers through July exceeded $9½-billion, fully half a billion more than in the seven months last year.

It is true, nevertheless, that the auto loan total has not been rising at a particularly rapid rate (and slowly compared with 1955). That's because **repayments also have been far higher than ever before.**

Lenders appear perfectly satisfied that auto credit will pay out. Yet there are frequent warnings, such as that by the Installment Credit Commission of the American Bankers Assn. this week, urging bankers to avoid the "excesses" of 1955.

•

More and more consumer borrowing is taking the form of personal loans. This type of credit rose to nearly $7.8-billion in July, a jump of $125-million in a single month.

Personal loans now are **14½% higher than a year ago.** By contrast, auto loans have gone up 6% in the same period and charge accounts only 2½%.

—•—

Good jobs are, if anything, a little harder to find than last summer (even though total employment is the highest it has ever been).

Those drawing unemployment insurance under state programs—a pretty good indicator of the number of full-time workers who can't find jobs—now total 1.2-million and has been running about 100,000 above a year ago pretty consistently.

Aircraft layoffs are showing up in the California figures where insured unemployment of 93,000 is some 50% ahead of last year.

Figures for **New York** and **New Jersey,** too, are about 20% higher than a year ago, although some of the layoffs are seasonal.

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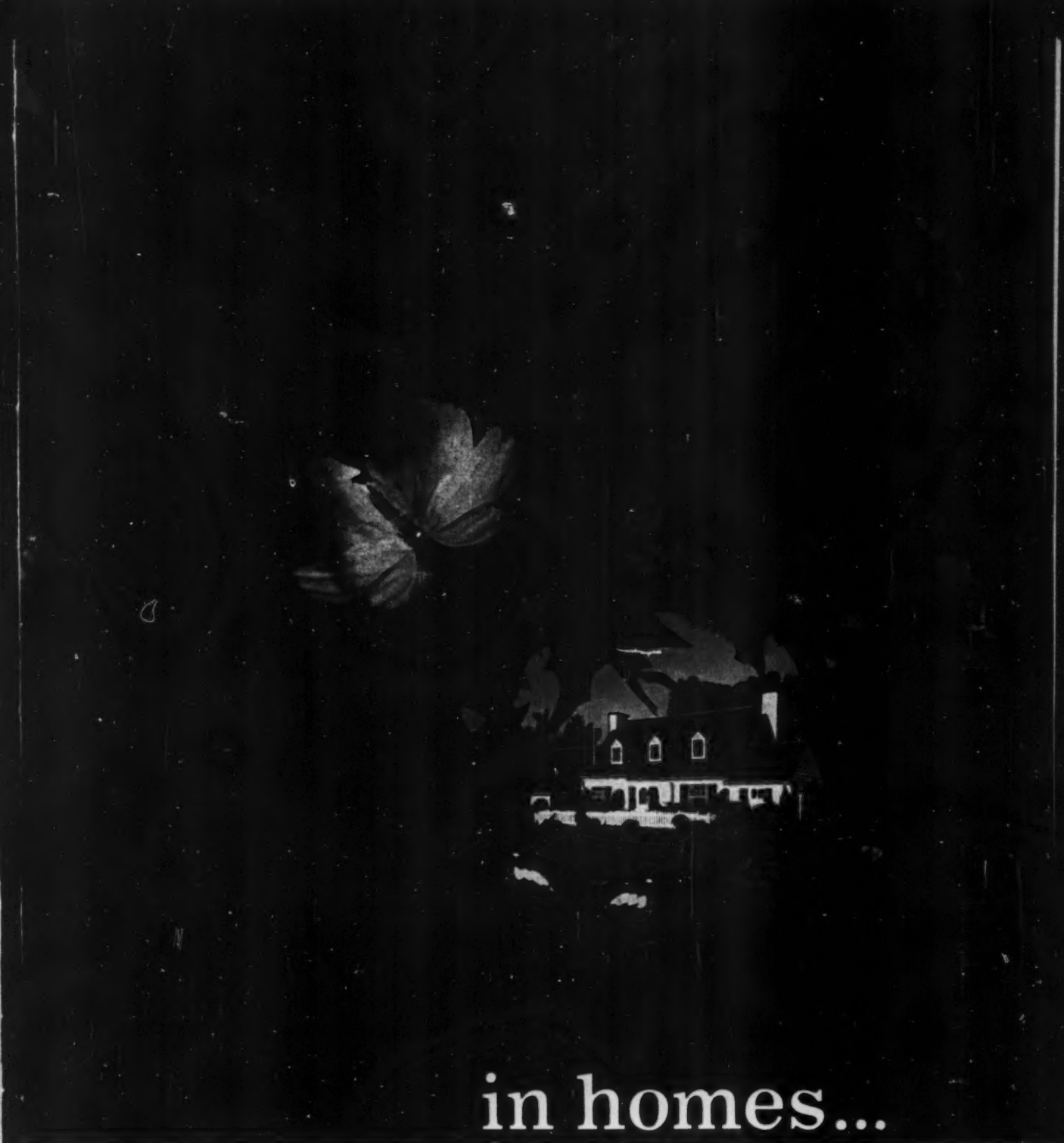

in homes...

no substitute can do what copper does!

Keeping out weather, heating more comfortably, assuring brisk flow of rust-free water through pipe lines . . these are jobs that only copper, of all building metals, does so well. Its superb resistance to corrosion adds years of life to roofing products, water and drainage lines. Copper's durability, ease of installation and outstanding ability to transfer heat makes it best of all metals, too, for radiant heating. In home wiring, no other commercial metal matches copper for electrical conductivity and ease of joining!

KENNECOTT COPPER CORPORATION *Fabricating Subsidiaries:* CHASE BRASS & COPPER CO. • KENNECOTT WIRE & CABLE CO.

Picture your package with a PICTURE WINDOW like this...

Window Box made for Revell, Inc., Venice, Calif. by Advance Paper Box Co., 1900 W. 62nd St., Los Angeles, Calif., Western Lithograph Co., 600 E. 2nd St., Los Angeles, Calif.

Revell has done it—magnificently . . . provided a sturdy, handsomely lithographed carton with a picture window of tough, clear-as-crystal Kodapak Sheet! A place for everything and everything in its place! Merchandise sells on sight . . . comes to customers fresh, untouched —protected from dust, dirt, prying fingers.

Interested in doing a functional restyle job on your packaging? Want to develop new displays, indoor or outdoor signs? Call our representative or write.

Cellulose Products Division
EASTMAN KODAK COMPANY, Rochester 4, N.Y.

Kodapak Sheet "Kodapak"... trademark for Eastman's plastic sheet

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BUSINESS WEEK

SEPTEMBER 7, 1957

NUMBER 1462

The easy election of Democrat William Proxmire (right) in a special Wisconsin senatorial electon raised doubts . . .

The Administration program was treated roughly by the session of Congress that just adjourned (table, page 25) . . .

And Pres. Eisenhower is smarting under these dual blows. Old-line GOP leaders are riding high, with . . .

New Republicanism at a New Low

THE EISENHOWER Administration, after four years and eight months of power, this week saw its fortunes slide to a new low.

Two events, one closely following the other, have brought into sharp focus the trouble that has befallen Pres. Eisenhower in his attempt to reform the Republican Party and win the nation's voters over to middle-of-the-road Republicanism.

First of these was the special senatorial election in Wisconsin, a solid Republican fortress by tradition. Democrat William Proxmire (picture) breezed to an upset victory that was made doubly remarkable by its startling proportion (page 204). Proxmire had campaigned hard against Eisenhower's farm and foreign policies.

Second of the events was adjournment of the first session of the 85th Congress. Eisenhower's program received rough handling on Capitol Hill, where Democrats are in control but where also Eisenhower Republicanism lost its allure for GOP lawmakers.

• **Rightwing Resurgence**—The defeats certainly strengthen the position of the old-style Republicans, who took Eisenhower as a name but, between Presidential elections, have found the Eisenhower team somewhat hard to take. They are the ones who never did want to remake the party in the image of Eisenhower. They are the ones who, for example, joined with Southerners in defeating the school aid construction program in the House even when the measure's managers were ready to give the President his program.

Eisenhower denies there is a right wing that opposes his policies. He said this week that the right wing and left

wing know they are "in this together." But leaders of the right wing are no longer so sure they want Eisenhower actively on their side in an election.

In Wisconsin, former Gov. Walter J. Kohler, although espousing Administration policies generally, was content to go to the test with nothing more specific from Eisenhower than a personal blessing bestowed at long range. Knowledgeable sources say Eisenhower would have been willing to do more for Kohler "if he had been asked."

The question, which only Kohler and his top lieutenants can answer, is this: Were they overconfident, or did they figure that too much White House help would be a handicap?

• **Not Negotiable**—There is no inclination among politicians of either faith to write off Eisenhower's personal popularity. But GOP members of Congress are being converted in bigger numbers to the view that comforts their Democratic rivals—the personal popularity of Eisenhower the man is not an asset readily negotiable for lesser Republican candidates.

So the President's critics within his own party are going to try to get a bigger say. They tell you that men around Eisenhower are too much interested in making the President look good, without taking into account how the party will fare in the states and districts.

I. Wisconsin's Impact

The Administration is now faced with the necessity for reappraisal, but—to the despair of Republican professional politicians—there are no signs that anything electric will come out of it.

The professionals' immediate concern: trying to get publisher Malcolm Forbes elected governor of New Jersey on Nov. 5 over Democratic Gov. Robert Meyner, a potential Presidential nominee in 1960 if he can win another term in the statehouse.

"This Wisconsin thing is a morale buster in New Jersey," says one top Republican strategist. "It can't do anything but hurt our man."

Their second concern: building for next year's nationwide Congressional elections in the face of what they fear are increasingly unpopular Administration programs.

• **Grand Strategy**—The organization strategists would like to see the Eisenhower Administration get ready for 1958 by (1) dropping Secy. of Agriculture Ezra Taft Benson, (2) beating Democrats to the punch by declaring early for an income tax cut, (3) doing a better job of explaining the importance of foreign aid.

Benson worries them most. Without regard for the substance of his policies and whether they are right or wrong, many a GOP organization strategist wants Benson dumped.

Democrats in the Middle West call Proxmire's victory a new chapter in the farm revolt that swept Democratic governors into power in Minnesota in 1954 and in Kansas and Iowa last year, and lost Congress to the Republicans as well. This interpretation is bolstered by the statistical fact that Proxmire carried some so-called Republican farm counties that had withstood even the Roosevelt landslides in the 1930s.

An official of the Republican National Committee concedes that Benson was a big factor in the amazing returns that put Proxmire in the Senate with a 122,000-vote margin out of 772,000 cast.

"I don't think there is a solution for the farm problem," says this official, "but getting a new face in Agriculture would give us a psychological lift."

• **Losing Issues**—In their post-mortems on Wisconsin, Republican organization experts also cite "tight money"—which tends to put the biggest squeeze on small business—as an unpopular factor, along with a "vague, uneasy feeling" among the voters that the U. S. somehow is not getting full value out of its foreign aid investments. Proxmire exploited both situations.

"And I don't know that tight money ever got anyone a vote," says a GOP official, dryly.

Eisenhower shows no inclination to read the Wisconsin returns as darkly as most of his fellow Republicans. At his Tuesday news conference, he took the line that Kohler's defeat was due to a split between right and left wings of the Wisconsin GOP.

"That was a piece of the picture," one party official says, "but it won't explain a loss of that size. Ten thousand or 20,000, yes; 122,000, no."

The President did oblige the professional strategists on one point. He made a stirring defense of foreign aid, calling it the cheapest and only effective security available to the free world. On tax reduction, Eisenhower had a chance to make the pros happy, but he passed it up without saying yes or no.

The political organizers are not hopeful of having their way. "It's easy enough to get an audience at the White House," one of them says, "but getting an audience and getting action are entirely different things."

II. Congressional Record

The recently adjourned Congress was, from the White House viewpoint, a generally obstreperous one. Eisenhower himself uses the word "disappointing" to describe it.

His biggest disappointment was the refusal of Congress to give him all the appropriations he asked for the foreign aid program. That was a throwback to the economy mood that engulfed Congress in the spring and created confusion within the Administration.

Both Democratic and Republican friends of the President blame White House vacillation for the failure of the Administration's school construction bill. Later, the President infuriated both Republican and Democratic supporters by changing his signals not once, but twice, on the defense budget.

• **Democratic Confidence**—With Democrats in control, Congress was wary of the Administration's program from the start. The Democrats, impressed by Eisenhower's great personal triumph of last fall, were uncertain about whether to go along with his program or to oppose it and ram through their own.

As the session wore on and the White House tactics aroused irritation both within and outside the Republican Party, the Democrats became more aggressive. At the end, the Congress had a more definite anti-Eisenhower tinge.

Part of this was inherent, of course, in the division of authority between a Republican President and a Democratic Congress. But part of it developed as the session went along; it stemmed from the feeling that the Administration's popularity was on the wane. Biggest manifestation of this was, of course, the so-called grassroots economy campaign that greeted Eisenhower's record $71.8-billion budget.

The upshot of it was that Congress gave the President little that he asked in the way of major legislation (table, page 25), and it gave virtually nothing that had not been given at least some sort of Democratic stamp.

• **Inquisitive Congress**—What it lacked in legislative gusto, Congress made up in investigative enthusiasm. It belabored the Eisenhower power policy and forced a withdrawal of the rapid amortization certificate given to Idaho Power Co. for the Snake River project, which public power partisans wanted to see the federal government carry out.

The Senate Finance Committee began a detailed inquiry into Eisenhower's "tight money" policy, one of the big issues for 1958.

Big labor and big business came in for their knocks, too. Sen. Estes Kefauver's Anti-Monopoly subcommittee went after steelmakers for raising their prices. Kefauver plans a similar inquiry into automobile pricing.

Most spectacular of the year's investigations was that into labor racketeering. Chmn. John L. McClellan's Select Senate Committee has concentrated thus far on exposing racketeering and corruption at high levels in the International Brotherhood of Teamsters. But this inquiry seems headed for a long run on Capitol Hill, with other unions due to be put in the spotlight later.

What Congress Did and Didn't Do This Session

It approved these:

- **EISENHOWER DOCTRINE**

  Gave President authority to offer military and economic aid to Mid-East countries, stated U. S. is "prepared to use armed forces if the President determines the necessity."

- **CIVIL RIGHTS**

  As passed finally, the bill mainly authorizes federal action to protect Negro voting rights. An Administration victory, but a less inclusive rights bill than Eisenhower wanted.

- **FOREIGN AID**

  Eisenhower got only $3.3-billion in new funds—$500-million less than he had asked. Congress turned down his key proposals to put the program on a long-term basis.

- **HOUSING**

  Authorized lower FHA down-payment requirements and set "reasonable limits" on mortgage discounts. The Administration reluctantly put the legislation into effect.

- **PAY RAISES**

  Voted pay increases for postal and federal white-collar workers against Eisenhower wishes and in face of veto warnings.

- **TAXES**

  Extended existing excises and 52% corporate profit tax rate until June 30, 1958.

- **NIAGARA POWER**

  Gave New York State Power Authority permission to develop power project in international waters at Niagara Falls.

- **RAPID AMORTIZATION**

  Ordered rapid tax write-offs limited to manufacturers of new or specialized items in direct defense or atomic energy projects, and an end to the program by Dec. 31, 1959.

- **ATOMIC ENERGY**

  Authorized federal insurance for civilian atomic reactor plants. Senate ratified treaty of participation in the International Atomic Energy Agency (page 32), and dealt the Administration a blow by ordering a start on a program of building federal reactors for civilian power production.

It turned up, postponed, killed:

- **SCHOOL AID**

  Administration will try again next year to get federal aid for school construction, killed this session in House.

- **NATURAL GAS**

  Bill to take away FPC authority for utility-type regulation of natural gas production was put over until 1958 without a vote.

- **OMNIBUS BANKING BILL**

  House Banking Committee promises early hearings next year on Senate-passed bill modernizing basic banking laws, stiffening federal regulation of bank mergers.

- **POSTAL RATES**

  Senate committee buried Administration's House-passed bill to raise postal rates and put Post Office on a paying basis.

- **ANTITRUST**

  Two major bills were put over to next year:
  (1) Requiring corporations to give 60 days' notice of merger plans;
  (2) Limiting the use of "good faith" as a defense in price discrimination cases.

- **DEPRESSED AREAS**

  Eisenhower bill for aid to areas suffering from excessive unemployment got nowhere.

- **MINIMUM WAGES**

  Hearings were held in both House and Senate committees on proposals to extend coverage, but no further action was taken.

- **TVA BONDS**

  House committee bottled up, until 1958, Senate-passed bill authorizing Tennessee Valley Authority to finance expansion by issuing $750-million of revenue bonds.

And is investigating these:

- **LABOR RACKETS**

  The Senate's McClellan committee, concentrating thus far on the Teamsters, will stay in session during the Congressional recess. It promises more hearings on the Teamsters and other racket-ridden unions.

- **PRICES**

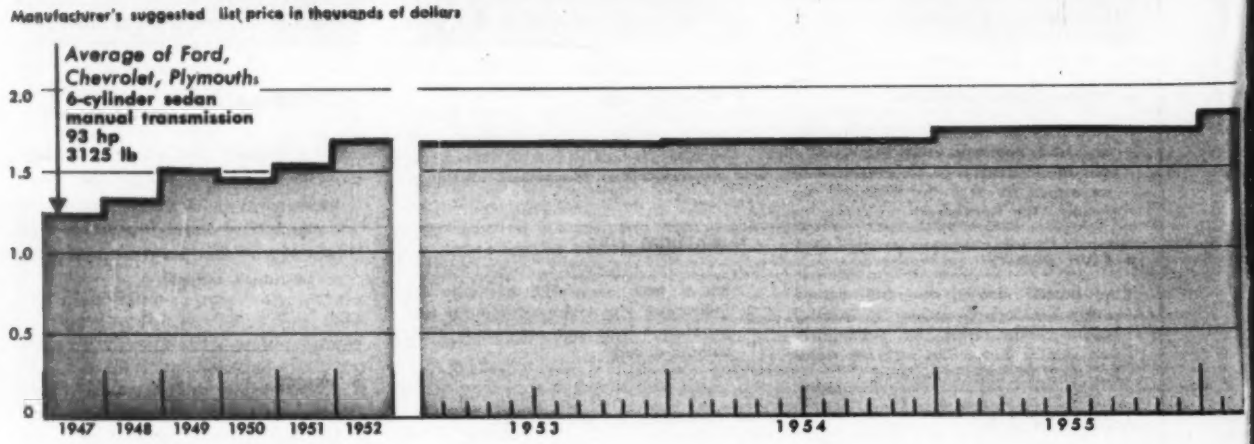
  Sen. Estes Kefauver opened with steel, plans to go on this fall to autos and perhaps other sectors where he alleges "administered prices"—those not influenced by give and take of the market—are dominant.

- **MONETARY POLICY**

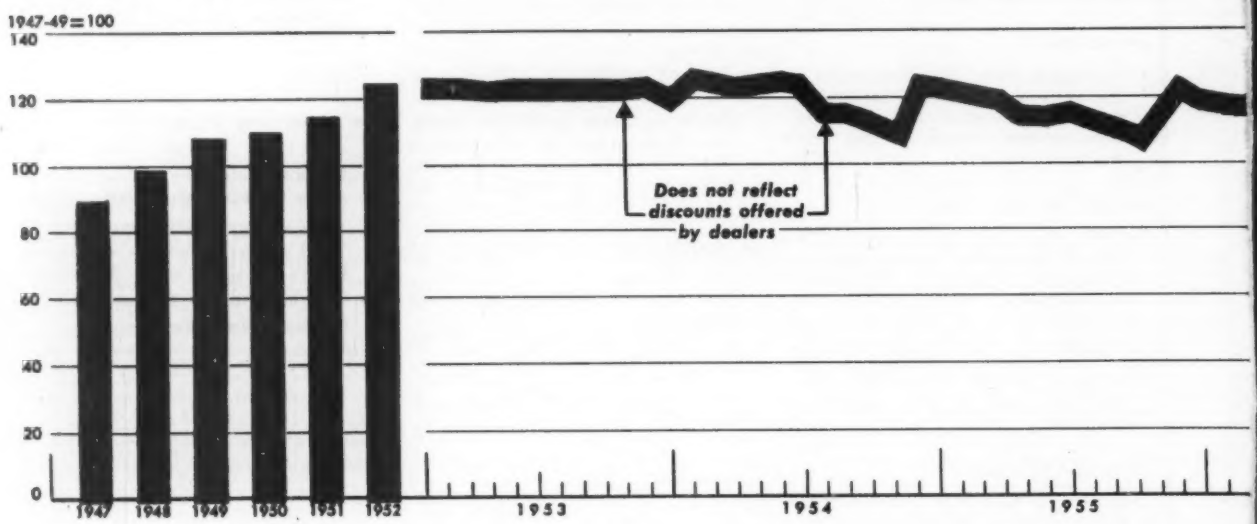
  Democrats count on making political hay in 1958 with Senate Finance Committee's now-recessed investigation of "tight money." Hearings will resume, but it's not certain when. Republicans think it will be in 1958, as a buildup to Congressional elections.

AUTO PRICES:

1. How they look from Detroit, and . . .



2. . . . How they look to the customer



In 1958, Autos Will Go Up—But

PROSPECTIVE BUYERS of 1958 automobiles may be surprised when Detroit begins to announce prices in the next few weeks. The new suggested list prices will probably continue the climb shown in the chart above. But the increases may not be so stiff as the current battle of words between auto company presidents and Walter Reuther would lead you to think.

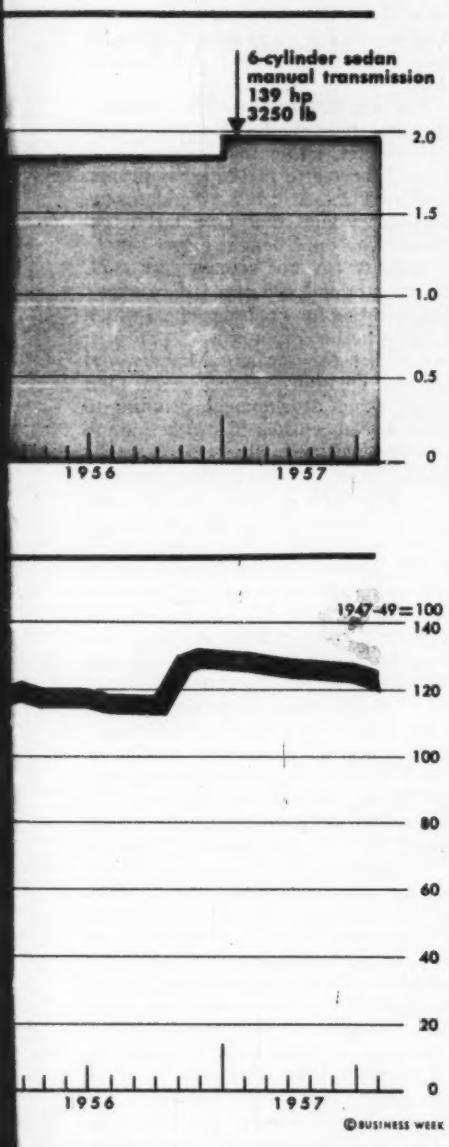
It's a good bet that prices will go up less than last year's 5% to 6%—and far less than the 8.5% jump taken by one of the low-priced makes between 1955 and 1956 models. The auto makers are figuring with needle-sharp pencils for two big reasons:

• They are waging a public opinion battle with Reuther over his United Auto Workers' campaign for wage increases without price increases.

• More important, they're afraid of the customers.

• **Grounds for Guessing**—The Edsel prices announced this week furnish no basis for comparison with last year, since the car is new to the marketplace. But the range of Edsel's "factory-suggested retail prices" gives a little room for speculation. The cheapest Edsel, a two-door stripped Ranger, is priced at $2,300; the costliest, a Citation convertible with automatic transmission, carries a tag of $3,489. Since Ford's most expensive low-priced car, the 1957 Fairlane 500, is tagged at more than $2,200 without accessories, anything more than a small percentage increase in price would crowd the Edsel.

Last week, Detroit was guessing that the 1958 boost would be about $100. But such guesses make little sense.



Not Much

To begin with, the auto industry's pricing system doesn't accommodate any flat-figure increases. And last year, although new prices averaged more than 5% above 1956, some prices went up only a few dollars.

• **Wages and Costs**—In his reply to Reuther's proposal for a flat $100 price cut, Henry Ford, II, said each 1¢ increase in wages upped the "labor cost content" at Ford more than $5 a car. Inasmuch as Ford's wage increases not already included in 1957 prices come to about 13¢, this suggests that the cost per car now is $65 higher than a year ago, the way Ford figures.

Another way to estimate possible price increases is to recall Ford's first schedule of 1957 prices. They were less than 3% above 1956's—and obviously would have given the company sound profits. But when Chevrolet announced price tags more than 5% higher than before, Ford boosted its prices to conform. The rise in auto industry wages between 1956 and 1957 models was about the same as it has been between the 1957 models and today. So if profits could have been earned this year with a 3% increase, it may not take much more next year to do the same.

I. Cautious Customers

There's a lot at stake in the industry's pricing decision. The biggest question, of course, is the size of the market for 1958 cars. No one is sure yet how many cars will be sold this year, primarily because no one knows how the new models will be received. But there seems to be general agreement that 1957 sales will come to a bit more than 6-million cars. That's hardly any gain, considering that the total may include 150,000 to 200,000 imported autos.

• **Price Conscious**—One big reason that sales have stood pat, responsible executives in Detroit feel, is that customers are measuring the price of cars against the many other things the same money could buy. A man may buy a fully-equipped low-price car, instead of his usual medium-price car, and have a little cash left over for other purchases. Or he may look at his three-year-old car and remember that when he bought it, a three-year-old car was the downpayment. Now he has to put up his car and $300 to get installment terms he can live with. So he may just use some of the $300 to fix up the old car.

The University of Michigan's survey of consumer intentions (BW—Jul.27'57, p53) put it this way: "We are in for a period of cautious and moderate expenditure."

Walter Reuther, of course, thinks the way to attract more customers is to lower the price of cars. That makes the industry's labor relations another issue in the pricing decision.

II. Aggressive Labor

Reuther feels the industry can cut prices and raise wages without damaging its profit position because, he says, a $100 price slash would bring in 1-million more customers. The UAW argues that by the time the $100 cut at wholesale reached the retail level it would amount perhaps to $140. Reuther's experts say that might reduce a typical monthly payment as much as $10—and any auto dealer would agree that such a difference often does make or lose sales.

• **Union Angle**—Reuther is pitching his proposal loftily as a fight against inflation. But he has promised his members a fat wage boost when contracts are negotiated next spring. And he doesn't want higher prices blamed on higher wages. So he is attacking the one factor in auto pricing the companies feel they must protect—retained earnings for expansion.

Reuther says the companies should cut the amount of profits retained for expansion, pass the cut along to buyers and workers, and go to the money market when they need capital.

This argument makes plain that the auto industry's entire way of doing business is at stake in the pricing decision. The industry's unique pricing system, based on the "standard volume" concept (BW—Apr.6'57,p61), may be in sad need of modernization.

III. Time for Change?

Standard volume is the average number of cars that must be produced over a period of years to attain a desired market position. Production facilities must be bigger than standard volume, to allow for cyclical and seasonal peaks. As a rule, an auto maker needs enough capacity to produce standard volume while operating at 80% of capacity. So, in pricing, you figure direct costs on each unit of standard volume and, among other things, a 20% return on invested capital. Any sales above standard volume boost profits disproportionately—and if sales fall below, the result is simply a return on investment of less than 20%.

• **In the Bind**—This pricing system has brought the industry a problem.

• Stand-by capacity for the peaks is so expensive that a bigger and bigger return is needed to earn 20%.

• At the same time, wage costs have risen, and the industry points to a recent Bureau of Labor Statistics study to prove that they have outrun productivity improvements (BW—May 25'57,p52).

As a result, the auto makers are raising the standard volume and reducing the percentage of capacity reserved as stand-by. They can do this because the peaks in the auto market show signs of leveling off. In neither 1956 nor 1957 was there the violent upswing of past years. Besides, because of its SUB agreement with the UAW, the industry is trying to regularize production and employment.

However, Detroit is not yet thinking of abandoning the standard volume concept. It's just that getting more work out of present capacity may be the only hope of keeping 1958 price increases below 5%.

JAMES J. NANCE, trouble-shooter for Ford, has been given command of a combined Lincoln-Mercury division and will take the lead in . . .

Switching Ford Tactics

With a steadily-shrinking demand for medium-price cars, the auto company is rewedding Mercury to Lincoln. For Nance, it means getting experience as an operating man.

FORD MOTOR CO. moved last week to get itself out of a troublesome spot. The problem stems from plans made two years ago, plans that went awry. At that time the company bet on a greatly expanded auto market—and one with particular strength in the medium-price area. It set up new divisions, built new plants and planned new cars. But, as is now evident, the market has not expanded (page 19), and the middle range is the weak part.

That's why the Lincoln and Mercury divisions, separated two years ago, were put back together this week as the Lincoln & Mercury Division. To run the combined division, Ford has called in a trouble-shooter, James J. Nance, who organized Ford's new full-line marketing policies (BW—June22'57,p45).

With the introduction of the Edsel this week, which gives Ford a car in every price category, Nance's initial job of working out marketing strategy for the company was finished, and he was available for the toughest job Ford has: to reunify the Lincoln and Mercury organizations and product programs and give them new merchandising oomph—without destroying any benefits that have come from the original separation.

F. C. (Jack) Reith, formerly general manager of the Mercury Div., is being "appointed to another executive position," says Ford. Ben D. Mills, formerly Lincoln Div. general manager, retains his company vice-presidency and will be assistant general manager of the Lincoln-Mercury Div.

Both Reith and Mills, when they took over their separate divisions in the spring of 1955, were given fairly specific goals and plans to achieve them. But these were based on assumptions that no one at that time could know wouldn't pan out. The old Lincoln-Mercury Div. had common plants, common sales staffs, common product outlook, and one dealer force.

Then in 1955, with the raging success of Buick and Olds, it appeared that the medium-price market was going to develop to such a point that Mercury (also a medium-price make) could not realize its potential without undivided attention. And neither could Lincoln.

So the two divisions were split. Reith and Mills built new plants, sparked diverging product development and organized marketing and sales staffs. Originally there was some thinking in the company that with the introduction of the Edsel, the common Lincoln and Mercury dealer force would be separated, with some Lincoln dealers being given the Edsel franchise, and Mercury dealers being given a big—almost Lincoln-size—Mercury to sell.

Lincoln now has its own plant cranking up for 1958 production of an all-new integrated-body Lincoln. Mercury has a super-Mercury, the Parklane, for 1958 introduction.

• **Changing Market**—But the market has changed radically. The high-price market, where Lincoln sells, has remained strong. Last year was Lincoln's best, but sales this year have slumped a little.

However, the seven cars—Buick, Oldsmobile, Pontiac, Mercury, Dodge, De Soto, and Chrysler—generally regarded as medium-price makes have been losing ground. In 1955 the seven accounted for about 40% of total sales. Last year their share was down to about 35%. And for the first six months of this year, sales slumped to 32% of U.S.-made cars.

The medium-price cars have suffered, of course, from the fact that the over-all auto market, rather than expanding as it was expected to in 1955, has shrunk. And the cheapest cars have added new, high-priced lines that have taken customers who once bought bigger cars.

Mercury has not actually lost sales, but its gain of 1,400 over last year feels disappointing for a redesigned car which is being pushed vigorously.

Ford let the separate Mercury and Lincoln Divisions proceed with their 1958 product development, planning to move in Nance when his marketing job was finished and when there was a logical time to rewed the divisions. Now that both Lincoln and Mercury are nearing the market, the time to start off on a new course has arrived.

• **Why Nance?**—Nance looks like Ford's best man for the new managerial job for two main reasons. First, his business reputation (particularly at Hotpoint, Inc.) is based on getting maximum marketing and manufacturing efficiency out of a wide range of products. That is the problem at Lincoln and Mercury. Each division has separate marketing and administrative staffs, separate manufacturing and products that in 1958 take widely divergent paths—and a total market that just isn't growing. Mercury styling advances its 1957 theme and has frame-and-body construction. Lincoln in 1958 launches a new styling theme and has frameless construction in a plant not designed for frame-and-body assembly. There is scarcely any interchangeability between the two cars. Ford officials obviously believe that Jim Nance can get some interchangeability and manufacturing efficiencies by combining Lincoln and Mercury effort without necessarily making the two cars similar in appearance and construction (unless customer taste dictates it).

The second reason for moving Nance into Lincoln and Mercury is related to Ford's and the industry's executive pattern. In the automobile industry, where success is measured by sales, no staff man is ever "demoted" when he is set to running a division where, after all, the profits are churned out. By the same token, few auto men have ever reached the top without having operated a division (Henry Ford II is an exception for obvious reasons). Until he went to Ford, Nance had always been an operating man; and for him to be fully rounded for future executive slots at Ford, he needs operating success in a company division.

Missiles Face Economy Review

● This weapons program already is beginning to feel the tightening of purse strings as a new policy emerges.

● The aim seems to be to concentrate funds on fewer projects to eliminate "unwise" spending.

● This is bound to stir up new controversy over U. S. missile development, especially in light of Russians claims.

During all the fuss over cutbacks in military spending, the crash program to develop long-range ballistic missiles has been untouched. The Defense Dept. has had an open-purse policy for the big missiles, has poured into the projects virtually all the money research officials said they could use.

• **Signs of Change**—But this week, a change in policy is shaping up. The once sacrosanct ballistic missile program is starting to come in for its share of budget-cutting. So far, there have been no hard and fast decisions. The change in mood at the Pentagon, however, is obvious. Says one top official: "Up to now, we've rushed into ballistic missile schedules willy-nilly. We're now taking a more realistic look." Some signs of the change:

• The Air Force has been ordered to reduce procurement of ballistic missile prototypes for test launchings.

• Production plans for the Air Force's Titan intercontinental ballistic missile (on which Martin and Aerojet General are working) are being scaled down, and development goals stretched out. The missile is more advanced in design than the competing Atlas (Convair-North American Aviation), but was started later and lags behind in development.

• Funds for the Navy's Polaris (Lockheed-Aerojet General) intermediate-range project have been reduced.

• The exemption of ballistic missile engineers from overtime pay restrictions is being ended.

This shift comes right in the wake of Russia's announcement of a "successful test" launching of an intercontinental ballistic missile (BW—Aug. 31'57,p30). And it's sure to step up the tempo of controversy surrounding U. S. strategic missile development.

• **Confused Picture**—But with the lid of official secrecy still tight on the missile program, the discussion has often seemed more confusing than revealing:

• Two days after the Russian announcement, a long-range ballistic missile was fired from the Cape Canaveral (Fla.) test center. The Pentagon stuck to its policy of saying only that a missile was fired. But the next day in Miami, Army Secy. Wilber M. Brucker hinted strongly that the missile was the Army's Jupiter intermediate-range (1,500-mile) ballistic missile, a weapon he called a "spectacular success."

• Four days after the Moscow announcement, another long-range ballistic missile was launched from Cape Canaveral. No official details were released, but observers seemed certain the missile was the Air Force's Thor IRBM, interpreted the test firing as only a "limited success." The Defense Dept. now is deciding which of the two competing IRBM projects to tap for production.

• A Miami newspaper reported that the Air Force had successfully launched the Atlas intercontinental missile some weeks ago. Most observers, however, pooh-poohed the story; the Pentagon, as usual, said nothing.

• Sen. Henry M. Jackson (D-Wash.), chairman of a joint Congressional subcommittee on military atomic applications charged that the Pentagon has cut back proposed IRBM and ICBM production schedules because of "money limitations," warned that the Rusians are likely to mass-produce an operational ICBM before the U. S. can.

• Acting Defense Secy. Donald A. Quarles retorted that "subject to further study, we have not allowed funds to injure the program to the best of our knowledge."

• **Secrecy Issue**—Behind the charge and rebuttal, many military and industry missile experts are trying to get the Pentagon to loosen missile secrecy. They're disturbed over their belief that the public feels the U. S. is lagging dangerously behind Russia in the ballistic missile race.

• **Different Approaches**—Russia has been working steadily and seriously since the end of World War II to develop a 5,000-mile ballistic missile. It has gone at it by first perfecting a shorter-range ballistic missile, then boosting its range successively until an intercontinental capability was achieved.

On the other hand, the U. S. program has been running on an off-again, on-again basis from the start. And when the decision was finally made just three years ago to go ahead at top speed, the objective was—as a critic puts it—"to go for the ICBM in one jump."

• **Spending Policy**—Huge sums are being poured into the program. Indeed, the most serious criticism now made is not that the program has suffered from inadequate money over-all, but that money has been unwisely spent on at least five different ballistic missile projects at once. Many officials now feel that research effort and costs should have been concentrated with fewer contractors. It's in this mood that action is now being taken to shake down the program.

It's generally assumed that the Russians are closer to an operational ICBM than we are. But defense officials do not consider this catastrophic in view of the infant stage of the missile art.

At his press conference this week, Pres. Eisenhower pointed up this thinking when he said, "for a long time, the long-range missile is not going to provide the best means of delivering an explosive charge."

The President also said that "there is a long distance between proving that you can fire one test instrument . . . and acquiring that instrument in sufficient numbers and sufficient reliability to be worthwhile tactically."

The wrangle over the Russian announcement is sure to go on. As the President pointed out, the Russian statement is more notable for what it didn't say than for what it did. And there are, of course, security wraps that keep American officials from revealing all they might about the status of the U. S. program.

• **Anti-Missile Missiles**—While the wrangling over ICBMs goes on, the Pentagon is quietly working on plans for a defense against long-range ballistic missiles. Design proposals by three different teams of industry contractors have been submitted for an "anti-missile missile" tied into a long-range radar warning system.

Working on an Army contract, Bell Telephone Laboratories and Douglas Aircraft have designed the "Nike-Zeus" system. For the Air Force, General Dynamics' Convair Div. and Radio Corp. of America have put together the "wizard" system, and Lockheed Aircraft and Raytheon Mfg. Co. have drafted still another plan. The Defense Dept. is now considering which of the research projects to approve for further development. Also to be resolved is the sticky question of whether the Army or Air Force will get responsibility for ICBM defense.

Russia Balks at Arms Control

● Western diplomats think now that London talks were doomed from the start.

● They say Russia won't make real concessions except in serious emergency—which they don't foresee soon.

● Collapse of the talks means probable changes in U.S. strategy and defense spending.

FOR THE U.S.: Harold Stassen.

FOR RUSSIA: Valorin Zorin.

THE LONDON arms control talks finally fizzled out this week. Not even chief U.S. negotiator Harold Stassen (picture) is trying to maintain an optimistic front. British and French diplomats are saying unofficially that it will be at least a year, maybe two, before there's any point in negotiating again with the Russians.

Even if Russia agrees to keep the subject of arms control open in the United Nations, prospects for an East-West disarmament agreement are distinctly dimmer than when the London session began last spring.

• **Change of Mood**—In the spring, it seemed to the U.S. negotiators that the Russians were in economic trouble at home and were worried about the possibility that additional nations would develop atomic armament. Under these circumstances, the negotiators hoped, Russia might be willing to freeze the existing military situation.

Such a freeze was implied in the U.S. proposals that both countries (1) stop producing fissionable material for weapons and (2) submit to mutual inspection. Russia, of course, would have preferred a simple ban on atomic tests—a ban that would have prevented additional nations from developing atomic weapons while the U.S.S.R. remained free to strengthen itself in comparison with the U.S.

This week it became clear that the Russians, perhaps encouraged by their success with an intercontinental ballistic missile, aren't yet ready to settle for the existing balance of power.

• **Consequences**—There are sure to be widespread repercussions from the London failure—on the international atmosphere, on U.S. military spending, perhaps on U.S. strategic thinking:

• International tension will continue, maybe even increase. In the Middle East, the Russians have already dropped peace as their chief propaganda theme. Instead they're talking about the invincible power they have gained from being the first to develop an ICBM.

• U.S. defense spending, especially on aircraft and missiles, will probably start climbing, even though the Administration's first reaction to the London breakdown and the Soviet ICBM was not to take these things too seriously (page 29). Beyond that, Washington is certain to give serious consideration before long to new measures, including a huge program of shelters, for protecting the public against any possible Russian attack.

• If the breakdown of negotiations should lead to the conclusion that wars can't be made less likely through arms control, U.S. strategists will doubtless intensify the effort to develop small, clean nuclear weapons that can be used in limited wars, against strictly military targets. This would reverse the idea that has been prevalent since Russia developed the H-bomb—the idea that, because either side could destroy the other, there won't be any war, even a limited one.

• **The Only Surprise**—Soviet refusal to consider the Western proposals for arms control comes as no surprise in London or Paris. Even when the Russians seemed to be taking the London talks seriously last spring, British and French diplomats kept their fingers crossed. They could see no signs that Moscow was ready for the basic policy shift that would be involved in agreeing with the West on arms control.

There were none of the signs in Soviet behavior, for example, that came before the Kremlin reversed its line on the Austrian peace treaty two years ago.

The one thing that puzzles the British and French officials is the vehement manner in which chief Soviet delegate Valorin Zorin (picture) rejected the final Western disarmament proposals. This belligerence can only have hurt the Soviet propaganda position with most of the neutral-bloc nations. One French theory is that the magnitude of the concessions offered by the West caught the Russians by surprise, so that they had to reject them hastily and get out of the talks before the true Soviet attitude became painfully obvious.

• **American Dream**—In contrast to London-Paris skepticism, Washington seems to have hoped until very recently—Pres. Eisenhower and Secy. of State Dulles no less than Stassen—that Moscow would see the advantages of a limited arms control agreement.

Dulles in particular appears to have felt that the Russians' economic strain would make a degree of disarmament and a lessening of world tension look attractive to them.

U.S. officials have also thought that the Russians are just as reluctant as

we are to allow nuclear armament to spread beyond the three countries that already have these weapons: the U.S., Britain, and U.S.S.R. Besides, some of them have been convinced that Moscow got a scare during last fall's Suez-Hungarian crisis when the U.S. appeared ready to turn loose its strategic air force.

Given these basic considerations, so the theory went, the Russians might reasonably be expected to get on the arms control bandwagon. They might even have used a policy of conciliation on this issue to smooth the way for Soviet political and economic expansion.

• **Hard to Sell**—At the same time, Eisenhower and Dulles knew that the key proposals of the U.S. would be hard for the Russians to accept, especially our insistence on (1) a halt in production of fissionable materials for military use and (2) a tight system of aerial and ground inspection, which would reduce the danger of surprise attack.

In the first instance, it would go against the grain for Moscow to agree to an armament freeze that left Russia with inferior strength. In the second case, acceptance of the kind of inspection that the U.S. proposed might have endangered the Communist system of domestic political control and, perhaps more important, their system of military secrecy. The latter is one of Russia's most potent weapons, perhaps as vital to the U.S.S.R. as our worldwide system of bases is to us.

Looking back, it seems likely that the Russians never had any intention of agreeing either to a halt in nuclear weapon production or to any genuine inspection system. Agreement to these basic elements in the West's arms control package would have been acceptance of the present balance of power in world affairs—and an end of Communist expansion. That's something Moscow shows no signs of accepting.

• **Reading the Tea Leaves**—British and French officials suggest that Washington read too much into the economic and political difficulties that Moscow seemed to be suffering earlier this year. Economic troubles, they say, would affect Soviet foreign policy only if world war was imminent.

In London and Paris, diplomats feel further arms negotiations will prove hopeless unless Moscow's political situation requires their success—something not to be anticipated soon. Now that Russia has an ICBM, the Khrushchev-Zhukov regime must feel even less compulsion to change its policy.

It may be that Moscow seriously considered agreement to a slowdown in the arms race—but that was last spring. Any such thought doubtless vanished when the ICBM proved successful. And Soviet leaders may have then decided that the East-West balance had tilted in their favor, that with the new missile at its service Communism could expand without fear of massive retaliation from the U.S.

If that's the case, the West may have gained little from the London talks except a propaganda advantage. That gain is genuine enough. Neutral nations of the world have been impressed by the sincerity and the painstaking effort that the West put into the London talks.

Penn-Texas Throne Is Shaking

Insurgent directors make two attempts to dislodge Leopold Silberstein from the presidency. He's holding his ground so far, but a proxy fight may be coming.

Last spring, Leopold D. Silberstein of Penn-Texas Corp. ran out of money at the crucial time and had to give up an attempt to seize control of Fairbanks, Morse & Co. (BW—May18'57, p48). Today he's fighting a fire in his own backyard, Penn-Texas Corp.

Three insurgent directors of Penn-Texas—Robert Finkelstein, Wallace Whittaker, and Maj. Gen. C. T. Lanham—have tried at two directors' meetings in the past two weeks to oust Silberstein from the presidency. Both attempts failed, the first by a 5-3 vote and the second—with Silberstein hospitalized by an acute ulcer—by 4-3.

The dissident directors charged that two other directors had promised to vote with them but had recanted.

• **Chances for Fight**—Observers generally discount the ability of the insurgents to dump Silberstein from inside the board of directors. Silberstein can still count on four votes besides his own, and a recently elected ninth director nominated by him—Samuel F. Pryor, Jr., a vice-president of Pan American World Airways—is waiting to take his seat. Pryor has first requested the Securities & Exchange Commission to rule on possible conflict of interests between an airline and a company that makes aircraft parts.

Two of the three insurgents—Finkelstein and Whittaker—were elected in May to represent interests that made the counterattack headed by Alfons Landa, Washington attorney, and financed largely by Robert H. Morse, Jr., Fairbanks Morse president. (By a bare majority, the F-M board last week approved reimbursement of Morse for personal expenses incurred during the F-M proxy fight, presumably including the cost of mounting the counter-attack against Penn-Texas. Penn-Texas directors on the F-M board were absent).

The current moves, outsiders believe, are primarily for publicity as a prelude to a proxy fight based on poor financial results and dissension within the board. Sources of financing for an expensive open fight are currently obscure. Morse, who put up the money to elect the insurgents last spring, is barred from backing them further by the same agreement under which Silberstein agreed to make no more attempts on F-M for five years.

But Penn-Texas financially is on thin ice. It has for some time been paying dividends in stock rather than cash, at a 2% quarterly rate. No September dividend has been announced by the company, and Wall Streeters assume it has been omitted.

In the second quarter, non-recurring profits were instrumental in a net of $552,000, but the operating loss exceeded $250,000. Nearly 64% of the declared current assets were in inventory alone, and cash on hand barely covered outstanding debt. The company's holdings of more than 40% of the outstanding stock of Fairbanks, Morse now have a paper value of about $4-million below the average price of acquisition.

Penn-Texas divisions make machine tools, electronic equipment, materials handling equipment, guns and aircraft parts. And company officials insist that the outlook for the rest of the year is considerably better than during the first half.

• **Belling the Cat**—Stockholders and directors may be getting restive. According to a possibly apochryphal story that's making the rounds, most of the Penn-Texas board of directors greeted Silberstein at the pier when he recently returned from Europe. When they asked him to resign forthwith, he reportedly said: "Fine, gentlemen, I'll resign. Now which of you will undertake to find the money we need to keep the company intact." The rebellion collapsed right there, the story goes.

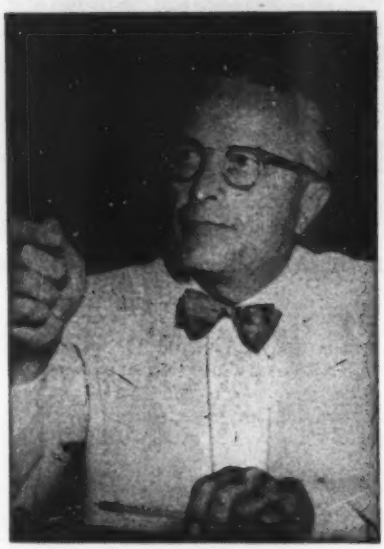
Whether or not it happened like this, the directors' respect for Silberstein's way with a financing problem is not denied by even his bitterest critics. In fact, one opposition director has suggested that, although he and his friends want more control over Silberstein, they aren't anxious to have him sever all connection with the company.

World Atomic Body Takes Shape

● Administration is pressing for appointment of Rep. W. Sterling Cole (right) as new agency's first director general. He is a staunch supporter of full U. S. participation in international development of nuclear power.

● If appointed—as expected—Cole would play an important role in setting the organization's initial course.

● One of the most delicate matters that the international agency may have to handle involves recommendations for specific equipment to be used in peaceful atomic projects.



The Administration this week ended any doubts that it intends to give all-out backing to the new International Atomic Energy Agency, which will coordinate world development of the peaceful uses of the atom. The State Dept. has revealed that it will push for the appointment of Rep. W. Sterling Cole (R-N. Y.) to a four-year term as first director general of the agency.

• **Foremost Advocate**—This is more than a routine appointment of a staunch Eisenhower Republican. Cole has been a member of the Joint Atomic Energy Commission since its creation and was its chairman during the last Republican Congress. He is the foremost advocate on Capitol Hill of full U. S. support for international development of nuclear power.

Last month, Cole waged a losing battle against the amendment proposed by Sen. John W. Bricker (R-Ohio) to the bill authorizing U. S. participation in the new agency. This amendment requires a vote by both houses of Congress approving each transfer of atomic fuel by this country to any foreign country if anything more than token amounts are involved. Cole continued fighting even after the Administration had capitulated to Bricker.

• **Russian Opposition**—Cole showed his enthusiasm for the agency by announcing he would resign from Congress to accept the position of director general if it were offered to him. The nomination has to be approved by a majority of the 50-odd initial members of the international agency, and the Russians are lobbying actively against Cole. U. S. officials are confident, however, that Cole will get the job. Russian influence in the agency is low, since the Soviets have failed so far to pledge either fissionable materials or much financial support to the organization.

I. The Agency's Role

The new agency now is entering a shakedown period. Next week its preparatory commission will hold its final session on preparations for the first general conference, which opens Oct. 1 in the former U. S. military hospital in Vienna. Probably about 50 of the more than 80 nations eligible to join will have completed ratification procedures in time to sit in on the first session.

• **Main Job**—Potentially the international agency will play the dominant role in the development of nuclear power around the world, as well as in encouraging the development of other peaceful uses of the atom. Its statute theoretically gives it wide powers to control and allocate fissionable materials, and to coordinate international training, research, and development. The agency is charged with setting international standards of safety and health both in design and location of reactors and in disposal of radioactive wastes. It is empowered to arrange financing for nuclear projects—although it won't finance directly itself.

The agency also will be saddled with the job of international inspection to make sure that standards of health and safety are observed, and to see to it that fissionable materials used in its projects aren't diverted to military purposes.

Eventually, it is envisioned that the agency actually will take physical control of fissionable materials turned over to it and set up a world nuclear fuel bank. It may build and operate research laboratories, regional research and development systems, training facilities, and even pilot reactor systems.

II. The Equipment Market

For U. S. manufacturers of atomic equipment the agency can be of big dollars-and-cents importance in competing in the potentially multi-billion dollar world atomic equipment market. Here's why:

• It will open new world markets to U. S.-made reactors. The U. S. now has bilateral agreements permitting sale of equipment for atomic research or power projects with 44 nations. About 80 are expected to join the international agency eventually. Many of these will be newly independent neutralist countries of Asia that have refused to enter bilateral agreements with the U. S. for fear of appearing to be Western-dominated. Without the agency, these potentially vast markets might have remained permanently closed to U. S. atomic equipment salesmen.

• The agency should provide a marketplace within which the buyers and sellers of atomic equipment can bargain with a minimum of government interference. As things stand now, bilateral agreements involve the governments of both buyers and sellers in every stage of negotiations. There even have been charges of favoritism on the part of one government or the other. Once the international agency is functioning—if it works as planned—it will take over many of the inspection and control functions of individual governments, which now keep them involved in commercial atomic negotiations.

• The international agency will have authority to allocate to member countries substantial quantities of enriched fuel made available by the U. S. This should help sell American-made reactors. All commercial reactors made in this country burn enriched fuel and only the U. S. has this fuel available in exportable quantities. Many nations have been reluctant to buy reactors that have a useful life of about 25 years in this country as long as the supplies of fuel for them were dependent upon the whims of the U. S. government. They have been tempted to invest in British reactor types, in which burn the widely available natural uranium.

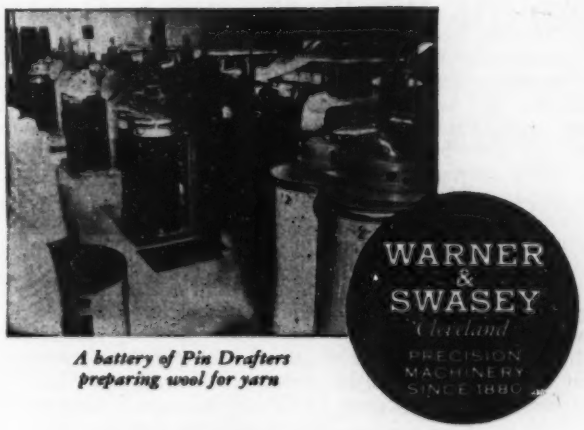
The agency's powers to dispense enriched fuel should quiet these fears,

Workers don't compete with management
—*they compete with other workers*

THE world buys wherever it can get the most value for the money—clothes, cars, work, everything. And it will pay a higher price for greater quantity and quality.

So—workers who want better jobs, steadier jobs, have to deliver more quantity and quality—otherwise the world will buy somewhere else.

All the contracts and pressures on earth cannot for long force people to buy a shirt or a steak or a day's production that is overpriced. A modern machine *well used* is the workman's best and only ally for permanent prosperity and security.



A battery of Pin Drafters preparing wool for yarn

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since it is unlikely that the U.S. ever would cut off supplies to the agency to spite one country.

III. Probable Procedures

Just how the agency will function as a medium for commercial atomic transactions yet isn't clear. But U.S. officials think it might work like this. Thailand, say, might request the agency for assistance in working out a nuclear power program. The agency would provide or secure technical assistance to help Thailand draft a project. Then agency scientists would review the technical feasibility and the economic practicality of the proposal. Eventually the agency staff would recommend approval of the proposal along with detailed recommendations. If the board of governors went along, fuel for the proposed plant would be allocated.

At this stage, the agency either could provide the Thais with a list of recommended manufacturers in various countries that make the sort of equipment required, or conceivably the agency itself could accept bids from manufacturers for the Thais contract—although this is unlikely at the outset at least.

• **Key Phase**—The key phase of the process for U.S. equipment manufacturers will occur when the agency recommends specifications for a given project. The agency then will be faced with a delicate political problem since the specifications will determine what type of reactor will be selected.

Just how the agency will handle this problem without becoming embroiled in charges of favoritism isn't clear—although one suggestion is that evaluation teams be made up of a mixture of partisans of all types of reactors.

All this still is far in the future, of course. The shakedown period will be long.

That's why Cole's nomination is important. As director general he would have the biggest say in setting the initial course of the agency. He would be responsible for building up a staff and for drafting an initial program for submission to the board of governors and general conference.

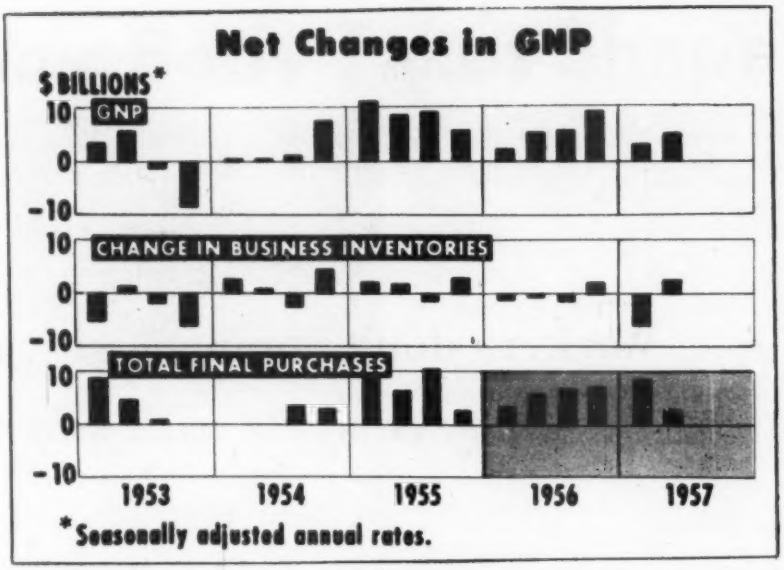
• **Initial Program**—The agency's tentative program calls for a $6-million initial budget, the hiring of 168 technical specialists. It sets these goals for the first year:

• Helping members to set up research projects and supplying them with the technicians and supplies needed; coordinating existing research projects.

• Setting up machinery for complete exchange of information between members.

• Establishment of machinery for supplying fissionable materials.

• Coordination of programs for training and exchange of scientists.



The Figure to Watch

Economic experts say final purchases show better than GNP which way business is heading. Some disagree.

EVERYBODY who is anybody among Washington economists is talking these days about "total final purchases" instead of "gross national product" as a measure of economic movements. The shift of focus means more than the adoption of a new fad by Capital sophisticates, for the new yardstick:

• Explains why business activity has been leveling off while GNP continued to gain.

• Backs up an argument to cut personal income taxes, rather than business taxes, next winter.

• **Element of GNP**—The chart above is similar to one prepared by the Council of Economic Advisers for recent showing to the President and his Cabinet. It demonstrates that total final purchases is what's left after business inventories have been subtracted from gross national product. GNP is total output of goods and services.

Many economists say final purchases is the best measure of real consumption and is more important than GNP to watch. Former CEA Chmn. Arthur F. Burns did much to turn the experts' attention to the final purchases figure, and the present chairman, Raymond J. Saulnier, is credited with popularizing the theory.

Not all experts accept final purchases as the best guide for where the economy is going. As long as statistics on business inventory are so imprecise (BW—Aug.31'57,p34), they say, subtracting inventory from GNP leads to an inexact figure, too. Besides, they add, inventory demand is too important in providing jobs and swelling dollar volume to be overlooked as an indicator of future business.

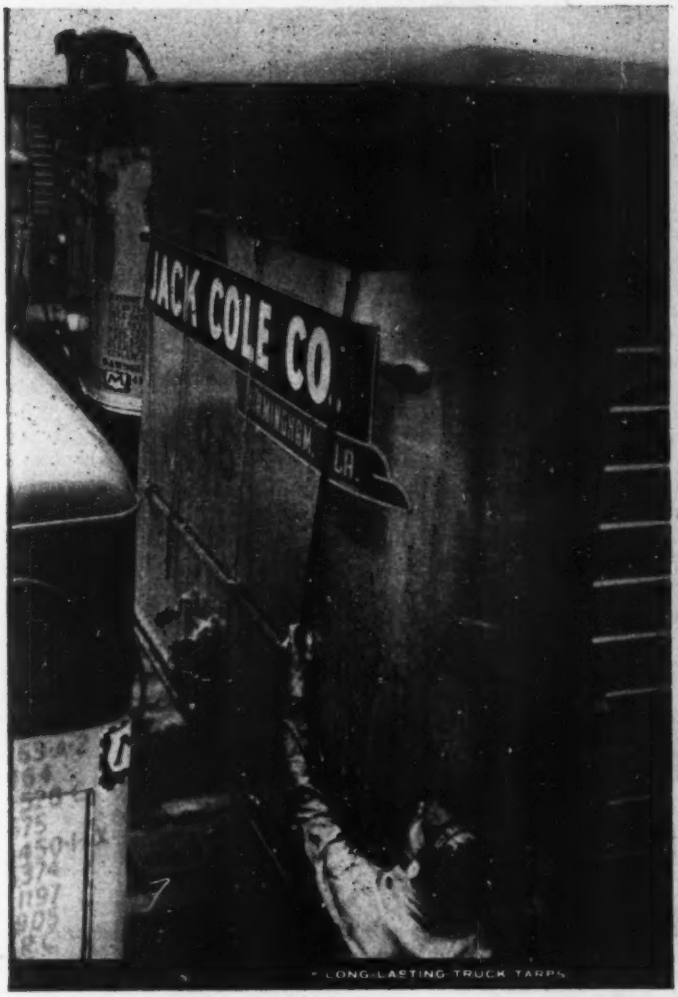
• **Sudden Drop**—In the chart, the quarter-to-quarter changes are shown for GNP, business inventories, and final purchases. Each element is measured in annual rate of gain. The two quarters of 1957 show why final purchases suddenly became the yardstick to watch.

In the first quarter, GNP rose a modest $3.1-billion (annual rate) but inventories shrank, so final purchases bounded upward by $9-billion. In the second quarter, GNP rose $5.2-billion, but this time inventories rose, too. So final purchases gained only $2.7-billion.

The smallness of this gain—which probably means an actual decline in physical volume, since price rises alone have been adding $4-billion to $5-billion per quarter—explains why business activity leveled off, the Council of Economic Advisers says. This dip in the rate of gain followed five successive quarters of increasingly large gains.

• **The Prospects**—Government economists are talking about a possible $3.4-billion rise in the rate of final purchases for the third quarter and $5-billion for the fourth quarter—if the new autos are well received. They see an inventory gain of $300-million this quarter, $1-billion in the fourth, with GNP rising to $438-billion in the current quarter and $444-billion in the final quarter.

If any stimulus is to be injected in the economy, these economists suggest, it should be in personal income tax reduction—to spur ultimate consumption that's reflected in the figures for final purchases (BW—Aug.31'57,p41).



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In Business

• • •

10 Southwestern Schools to Operate Oil Company They Inherited

Ten Southwestern universities and colleges—some of them giants in enrollment and football prestige—have taken over the operation of the $10-million Sells Petroleum Corp. It is said to be the first time that educational institutions have engaged in active oil operations, as distinguished from the harvesting of royalties or profits.

When Murray C. Sells died in 1953 he left the bulk of his estate, including the oil company, to the 10 schools, with little John Brown University getting 20%. Other shares included 10% each to Southern Methodist, Texas A&M, and Oklahoma, and 5% to the University of Texas, Baylor, and Texas Christian.

Last week the schools took over active operational control, through a board of directors on which each has one representative. Since Sells' death, the company has been run by the First National Bank of Dallas, executor of the estate.

The company has production in Texas, Oklahoma, Indiana, and Mississippi plus some 13,000 unproved acres of leases. Under the Sells will, any profits must be used by the schools for capital construction or student loans.

• • •

Three Companies Set Up a Fourth—Largest in "Nuclear Age" Metals Field

The largest integrated company in the field of special "nuclear age" metals was set up this week. Called Mallory-Sharon Metals Corp., it will have its first official birthday on Nov. 1. Its stock is owned equally by P. R. Mallory & Co., Inc., Sharon Steel Corp., and National Distillers & Chemical Corp.; National Distillers also gets $12.5-million in debentures.

The new company will have assets of $55-million when it's fully operative, including:

- Annual capacity of 10-million lb. of titanium sponge and 2-million lb. of zirconium sponge. The government will take half the zirconium; the other commercial half could mean annual sales of $25-million.
- Annual capacity to melt about 12-million lb. of titanium metal last year, production of milled products was 2.5-million lb.
- Exclusive, free use of National Distillers' sodium reduction process, said to be far cheaper than conventional methods of producing titanium. With this process, the company is likely to turn to production of hafnium and perhaps columbium.

Here's how the deal is set up. The present Mallory-Sharon Titanium Corp.—owned jointly by P. R. Mallory and Sharon Steel—will acquire all of National Distillers' facilities for producing titanium and zirconium, plus sole ownership of Reactive Metals, Inc., now owned jointly by National Distillers and Mallory-Sharon Titanium. Then the new corporate name will be adopted.

Stockholders of **Dobeckmun Co.** have approved the merger of their company into **Dow Chemical Co.** as a division. . . . **National Can Corp.** is buying the can-making facilities of **Consolidated Foods Corp.**'s Coastal Foods Div. for $2-million-plus. . . . **Bettcher Mfg. Corp.** is dickering for the **Apex Electrical Manufacturing Div. of White Sewing Machine Corp.**

• • •

ICC Threatens to Suspend Truckers With Excessive Safety Violations

The Interstate Commerce Commission this week got tough with truckers charged with violating safety regulations. It ordered six big interstate operators with bad safety records to "show cause why their certificates should not be revoked or suspended."

This strongest action yet by ICC followed spot checks around the country in July, with close to 90% of the 12,000 trucks inspected showing one or more safety violations. At the time, 18.6% of the trucks were pulled off the roads and placed "out of service" as "imminently hazardous" to operate.

Earlier ICC road tests in the past two years had generally revealed that almost 90% of the trucks inspected had safety deficiencies, primarily on brakes.

The truckers facing suspension will be given hearings in the next few weeks, with a chance to convince the agency that they will mend their ways.

• • •

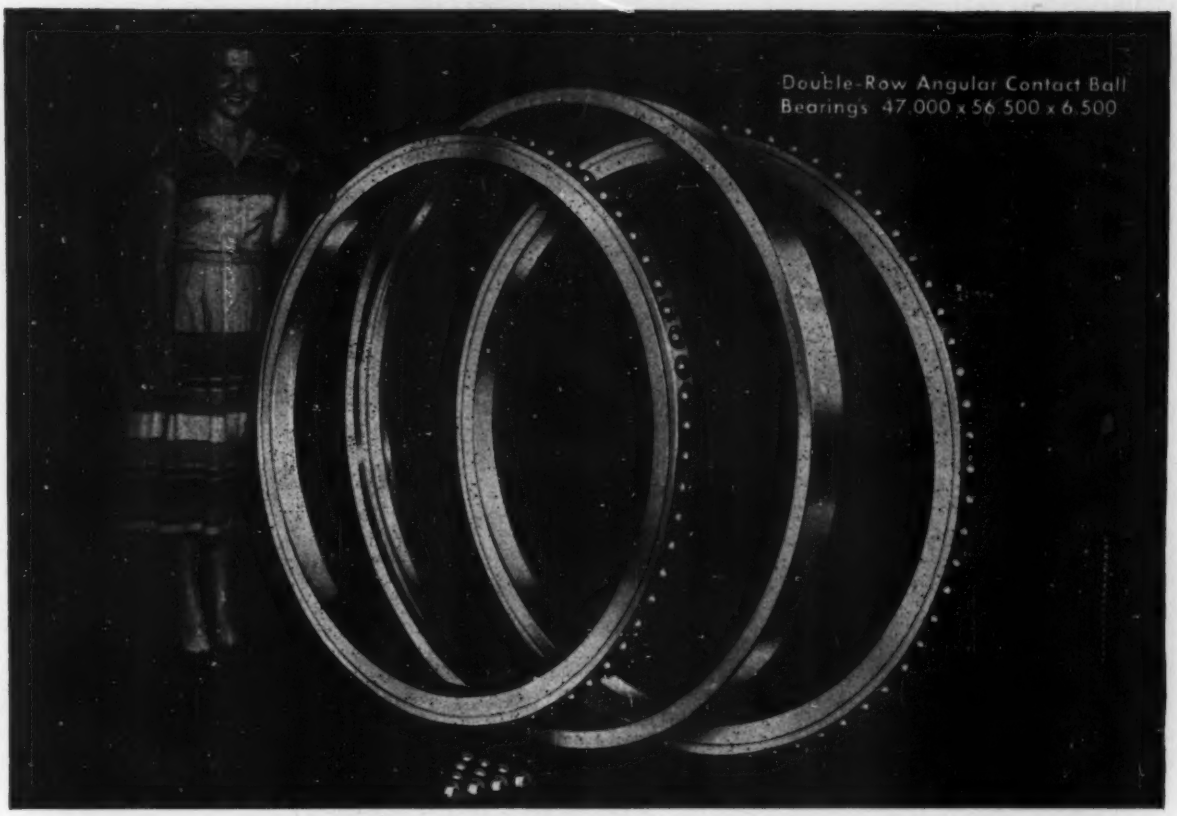
Business Briefs

Demands for a further rail freight rate increase are likely to be an active order of business when officials of the roads get together at a Western Traffic Assn. meeting on Sept. 19. Many Eastern and Western roads complained over the smallness of the 7% raise granted them last month by the ICC. And at least one Southern road, the Norfolk Southern Ry., complained that the 4% raise in that area did it no good because a major competitor, the Southern Ry., refused to apply the higher rates because of truck competition.

The pressure for office space in Manhattan was hardly eased at all by the more than 3.4-million sq. ft. of space completed in the 12 months ended May 1. The Real Estate Board of New York reports that virtually all the space was filled as soon as it was completed, with the over-all vacancy rate down to 1.3% from the 1.4% a year earlier. The record low was 0.2% in 1947.

The Court of Chancery in Wilmington, Del., has ordered postponement of the special stockholders meeting called for Sept. 12 in the battle for control of Loew's, Inc. (BW—Aug.17'57,p43).

By October, Vauxhall, General Motors British subsidiary, will be shipping 1,000 of its Victor cars to the U.S. each month. The cars will be distributed by GM's Pontiac Div.; port of entry prices will range from $1,812.50 on the East Coast to $1,994.64 on the West.



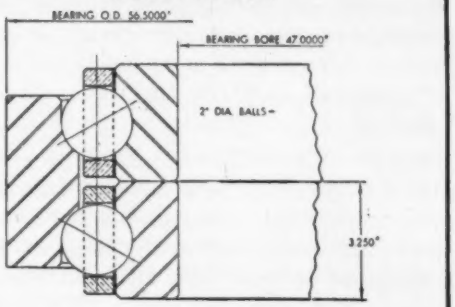
Here are the bearings that "couldn't be built"... *as produced by Kaydon*

THE manufacturer who wanted these bearings had been told they "couldn't be built." Or at least that's what he'd been told *until* he contacted **KAYDON**. What he required was a bearing 56½" in diameter combining high capacity, and exceptional precision for concentricity and face runout that would fit in limited space.

KAYDON designed a double-row angular contact ball bearing (see sketch at right). Actual tests have proved that the bearing fulfills every requirement.

If your designs require bearings of exceptional capacity, close-tolerance precision and/or very thin section — it will pay you to contact **KAYDON** of Muskegon. **KAYDON** has a long-standing reputation for accomplishing the near impossible.

CROSS SECTION — *The bearing that couldn't be built*



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Architects and Engineers: F. A. Fairbrother and George H. Miehls, Detroit; with Albert Kahn Associated Architects and Engineers, Detroit, as consultants.

General Contractor: E. & F. Construction Co., Bridgeport.

Mechanical Contractor: John Winkle, Inc., Larchmont, N. Y.

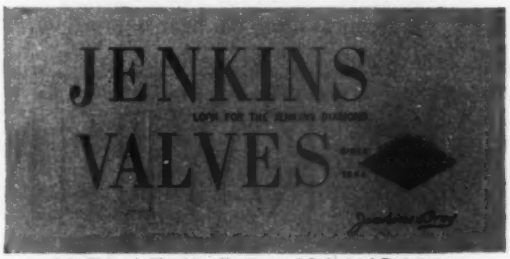
Where reliability is the watchword **JENKINS VALVES** were selected

Reliability has characterized Sikorsky Helicopters throughout a long record of military and commercial service. A watchword in the building of these versatile airplanes, *reliability* also was made the critical measure of all equipment for the 18-acre Sikorsky plant recently completed in Stratford, Conn.

On the valves to control much of the complex network of pipelines, management, architects, engineers and contractors found it easy to agree. From long experience on many jobs all could be sure of the reliability of Jenkins Valves.

This confidence in the specification "Jenkins", has been shared by building experts and plant operating men alike for 93 years. The valves that have won this great confidence bear the Jenkins Diamond trademark . . . and *they cost no more.* Jenkins Bros., 100 Park Ave., New York 17.

JENKINS VALVES shown controlling heating lines. Used throughout the Sikorsky plant on steam, water, air and process piping.



Sold Through Plumbing-Heating and Industrial Distributors

WASHINGTON OUTLOOK

WASHINGTON
BUREAU
SEPT. 7, 1957

There's friction within the GOP top command and it's bound to come out into the open before the 1958 Congressional elections roll around.

Behind it is a fight over policy. On the one side, you have Pres. Eisenhower's "Modern Republicanism," which might be described as a central government with liberal viewpoint passing down federal benefits to the states and local governments. On the other side is the GOP conservative wing—the party faction opposed to any social change—which rallied around the late Sen. Robert Taft for years and now feels rather left out.

The Wisconsin Senatorial result points up the conflict. The surprising win of the Democratic candidate for the seat of the late Sen. Joseph McCarthy has killed off just about every hope Republicans had for gaining Senate control. And now you have a situation in which each of the two factions tries to blame the other.

—•—

Eisenhower has no intention of changing direction. His last press session before the start of the month-long golfing-fishing vacation left no doubts about this. The President blames the Wisconsin result on misrepresentation and mislabeling. He discounts the possibility that his budget stands and other programs brought on the defeat.

But a challenge will develop. In conversations with GOP Congress chiefs and party leaders, you get the very clear impression that they hold Eisenhower largely responsible.

Here is the tone of the complaints: The President, barred by law from a third-term race, isn't taking much of a part in efforts to set the party up for the 1958 Congressional elections and the 1960 Presidential race. He's influenced much more by his own White House staff than by the party officials who have the job of making the political campaigns.

Critics mention Sherman Adams most frequently. Adams, as the assistant to the President, has more influence at the White House than any other member of the Republican Party. In fact, he is a sort of assistant President.

The chief complaint against Adams is that he is much more concerned with the day-to-day operations of the White House than in longer-range prospects for his party. Some of the complainers attribute this to Adams' limited political experience. He was Speaker of the House in New Hampshire, served one term in the House of Representatives and as governor of his state. It's Adams, more than anyone else, who determines the President's schedule. And critics say that he has gone too far in keeping political realities away from Eisenhower. They talk most often of the President's lack of contact with the members of the House and Senate.

What would the GOP politicians like to see, as they look ahead to the Congressional races next year and the general election in 1960?

First, they want a tax cut. This shows up in just about all interviews with party politicians here in Washington. As politicians, they like the idea of a balanced budget. But they have to deal with the public—the voters. And they feel lower taxes are more important than "fiscal sanity."

And they want more for farmers. There seems to be no question at all that if Agriculture Secy. Benson's job was subject to a party vote, he

would go out fast. Post-mortems call him a big liability in Wisconsin.

On spending, they talk of consistency. Frankly, they were dismayed at Eisenhower's January budget—a peacetime record. But they were also dismayed when Eisenhower then called for economy, then defended his spending program, and then wound up by demanding savings. Shifting always is hard to explain, politically. But the latest stand for economy in defense is closing plants in some places, cutting operations in others. The result is a loss of jobs, which any politician finds hard to explain.

Nixon will gain from the party row. As Eisenhower's interest in the play of politics, never very high, diminishes, local GOP leaders turn more and more to the Vice-President. Nixon is interested in organization.

But there's a real question mark over 1960. Nixon backers feel certain that before the GOP convention, Eisenhower will let it be known that Nixon is his choice as a successor. They see such an endorsement as very important in the nominating convention. But they have reservations as to what it will mean in the fight for votes. The danger, as these men figure it, is that Nixon may be tied in so closely with Eisenhower policies that the party's right wing will sit on its hands—withhold both money and votes.

—•—

On the Democratic side, Lyndon Johnson of Texas comes out of this session of Congress as the top man. He held his party together in the civil rights fight—got a watered-down law through when he might have killed it. This hurts Johnson in the South, but it gives him more strength in the big cities of the North and East.

His challenge will come from New Jersey. If Democratic Gov. Meyner comes through this fall with a convincing second-term win, then he will be hard to beat when the 1960 Democratic convention rolls around.

The weakness in both parties is this: Neither can offer a fresh name with automatic voter appeal—appeal such as Eisenhower had in 1952. And that may turn out to be the GOP's big asset. Nixon, while controversial, is much better known nationally than any of the Democratic hopefuls.

—•—

Both parties are hard up for money.

Democrats are in the hole from last year—some $700,000 in debt. With Eisenhower heading the GOP ticket, the Democratic party angels simply didn't come through. They felt the chance of winning was too slim.

The Republicans are barely liquid. Since January, when businessmen began to show reservations on Eisenhower policies, money has been hard to raise.

—•—

Politicians will watch business trends closely in the upcoming months. A softness in the outlook would bring switches in Eisenhower policy.

Eisenhower might change his farm policy. This probably would mean replacing Agriculture Secy. Benson. But it's in Midwest farm districts, as well as in Northern and Eastern big cities, that the GOP can hope to cut in on Democratic House seats.

Prospects for a tax cut get better all the time. Eisenhower came close to saying this week that his military spending hold-down is intended to give income taxpayers some relief next year.

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Use a world-wide network of bankers-at-the-spot to help solve your import-export problems.

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Whatever, or wherever your problem, you get the overseas help you need from the banker-at-the-spot . . . the man who has an intimate knowledge of local trade conditions and knows how to make them work for you.

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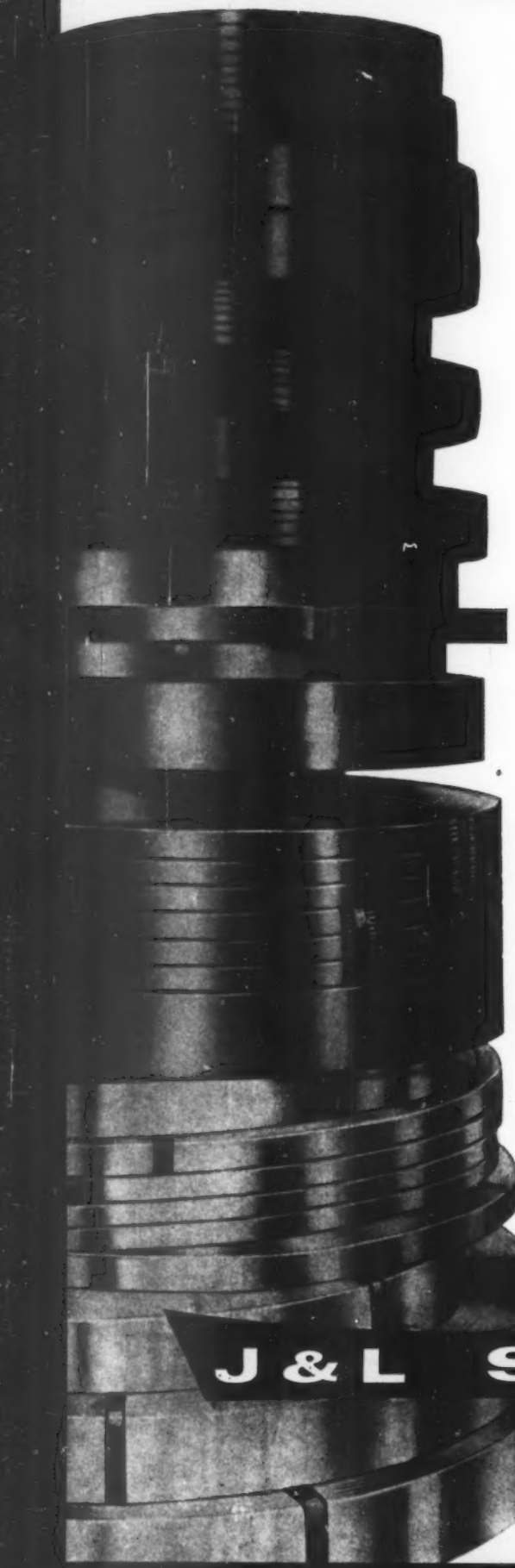

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J & L STRIP STEEL

MARKETING

Toll-TV: Will the Public Pay?

● Video's wired system for showing first-run movies in the home—for a fee—is now operating in Bartlesville, Okla.

● If the public takes to the idea, then pay-TV probably will spread fast to other cities, including the big ones.

● A lot of concerns are ready or willing to jump into the field—depending on what happens in Bartlesville.

Ever since the Federal Communications Commission first began pondering the question of toll-TV in 1950, this new concept in entertainment has been virtually awash in mounting waves of publicity. The most recent incident in the tempest over pay-TV involved the proposed move by two New York ball clubs to the West Coast (BW—Jun.15 '57,p46).

Now, after seven years of extravagant claims and counterclaims by pay-TV proponents and opponents, the concept is getting its first full-fledged commercial tryout, at Bartlesville, Okla., an oil town near Tulsa. The outcome of this venture may determine at last whether toll-TV can establish itself on a firm footing across the country.

• **Important Debut**—Video Independent Theaters, Inc., the 230-unit theater chain that operates the Bartlesville pay-TV setup through a subsidiary, Vumore, Inc., calls its system Telemovies. It shuns the name pay-TV because of the bad connotation this term has for motion picture exhibitors who have been among the staunchest foes of the new system. Video also insists its system isn't TV at all, but a new method of exhibiting movies.

This week, beginning Sept. 3, subscribers in Bartlesville were offered a first-run movie, Warner Bros.' The Pajama Game, over their TV sets, plus a second-run feature over another pay-TV channel. (Some business people hopefully recall that another Warner Bros. picture, The Jazz Singer, revolutionized the silent movie business.) Bartlesville will see 13-first-run movies per month, plus re-runs. By next month or so, a third channel will provide music, time announcements, and perhaps news.

• **Cost to Viewers**—The total package costs a flat $9.50 a month, and subscribers have the privilege of canceling the service at any time. There is no installation charge. And the service doesn't interfere with ordinary TV reception, since pay-TV channels are not used by stations in the area. Viewers can switch easily from pay-TV to ordinary TV.

The entertainment world, electronics manufacturers, TV networks and stations, and rival pay-TV operators all have their eyes glued on Bartlesville to see how TV set owners there react to the chance to watch first-run movies at home. They are looking for answers to important questions affecting the future of pay-TV. What happens could have profound implications for regular TV, motion pictures, and advertising.

I. Video's System

The start of actual programming in Bartlesville is a victory, possibly only a temporary one, for wired pay-TV. Pay-TV promoters first envisaged a different system that would use a scrambled signal broadcast by regular TV stations that could be unscrambled by an electronic device attached to TV receivers in the home. This over-the-air pay-TV aroused immediate and implacable hostility of TV networks and motion picture exhibitors. This method also involved using publicly owned broadcast channels, for which FCC is guardian. The system soon became snarled in FCC rulemaking procedures and political pressures from which its advocates have failed to rescue it up to now.

• **Early Test**—In the meantime, interest developed in a pay-TV system that sends its programs from a central studio over a coaxial cable closed circuit to the home TV receiver. Three years ago, International Telemeter, Paramount Pictures subsidiary, conducted a limited wired pay-TV test in Palm Springs, Calif., but stopped operations after a year. Debate is still raging over the relative merits of wired vs. broadcast pay-TV, but the wired system holds one immediate advantage: Most observers believe that FCC has no jurisdiction over it, though the question has never been settled definitely. At any rate, wire pay-TV promoters have been able to push ahead with their plans.

• **Basic Idea**—Basically, Video's wired pay-TV system is the offspring of the community antenna systems operating in various parts of the country. These systems have grown up where TV reception is bad. A high antenna is built to pick up regular network TV, and subscribers pay a monthly fee to be connected by cable with the antenna. Henry J. Griffing, Video owner, back in 1950 saw in such systems a potential means of delivering movies to the home, and went into the community antenna business. Video presently operates five community systems, and is building more.

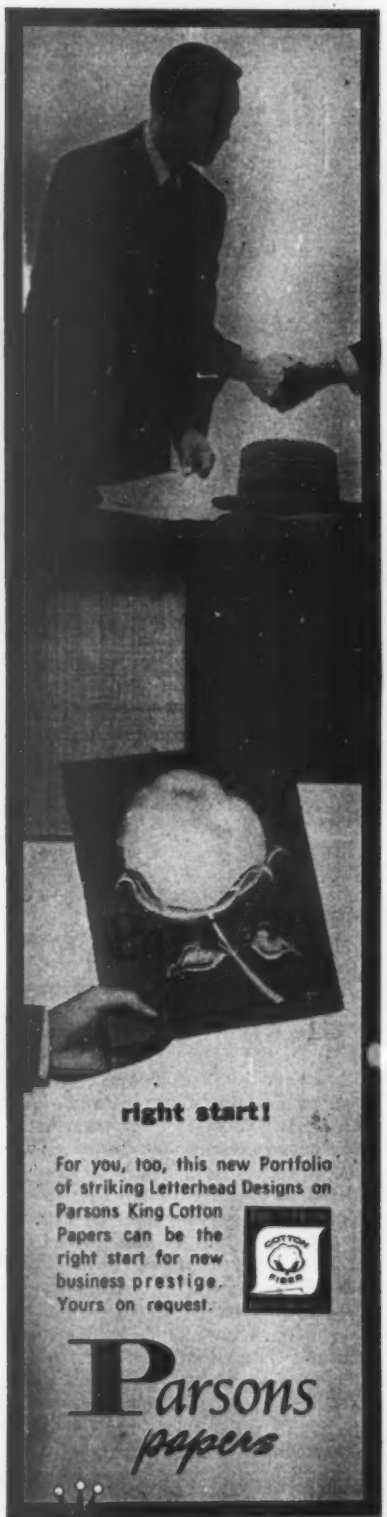
While developing his antenna systems, Griffing kept his eye on richer possibilities. In talking with movie producers, he found them "receptive, even enthusiastic." Griffing says "the producers generally agreed that they, too, had a big stake in any plan that promised to reach the millions of people who had stopped going to the movies."

Griffing began working with Jerrold Electronics Corp., Philadelphia manufacturer of community antenna equipment. Jerrold's Pres. Milton J. Shapp had developed a closed-circuit system for pay-TV called Cable Theater. In October last year, Griffing decided to go ahead and install the Jerrold system in Bartlesville.

Bartlesville was selected for several reasons. For one thing, Griffing owned all the movie houses there. The town also has a higher than average income, a population of manageable size (about 28,000), and it receives programs from all three major TV networks, making for a zestful competitive situation.

• **How It Works**—In essence, the Video wired system is simple. The studio, a converted 250-seat theater, is outfitted with conventional TV studio equipment for showing movies, except that it handles 35-mm. film instead of the usual 16-mm. movie film. This produces a clearer picture. A new piece of equipment enables Video to project wide-screen pictures such as Cinemascope and Vistavision.

The picture leaves the studio over coaxial cable, goes to a telephone company maintenance office, and out over cables strung on telephone poles. At present, about 40 miles of cable blanket Bartlesville's major residential areas, but more cable will be necessary as additional subscribers are added. Amplifiers also are mounted on telephone poles about every 1,500 ft. to assure a strong signal. Smaller cables feed off the main lines into customers'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". . . Video estimates six months will be needed to determine whether Telemovies are a success . . ."

STORY starts on p. 43

homes and are attached to TV receivers. A small switch enables subscribers to shift from regular TV to pay-TV.

II. Key Operation

From the technical standpoint, there's not much doubt that this system will work. The big question is: Will the public buy pay-TV programs? The Bartlesville operation should provide a glimpse at the answer.

• **Initial Response**—Actually, Griffing doesn't expect the complete answer to come until after the Bartlesville project has been in operation for a while. He takes a conservative view, is counting on a gradual public acceptance. He says it may be a year before "the public learns the pleasure of Telemovies in the home." C. O. Fulgham, a Video vice-president, estimates six months will be needed to determine whether Telemovies are a success. Video is cagey on how many subscribers have signed up already. Fulgham, who points out that his company began accepting orders just 10 days ago, says he has "several hundred" so far. This initial response, he says, matches the experience in towns where community antenna systems are installed.

Phil Hays, manager of Video's subsidiary, Vumore, estimates that about 2,000 subscribers will be needed for the operation to turn a profit. The goal is 4,000 customers, or about half of Bartlesville's TV homes.

• **Appeal to Public**—Video has been pushing Telemovies vigorously with local advertising including newspapers, billboards, handbills, direct mail, and telephone solicitation. Aside from the basic appeal of seeing first-run movies at home, these points are being stressed:

• Films will be free of interruption from commercials.

• Multiple showings permit subscribers to select their own viewing times.

• Closed circuit affords interference-free transmission, and the features will come through sharper and clearer than over regular TV.

Though Video is beginning a commercial venture, not a test operation, Bartlesville nevertheless is a pay-TV laboratory. The National Assn. of Radio-Television Broadcasters, for example, has conducted a survey there to find out what happens when wired TV hits a town, how it affects the present system of broadcasting. The National Community TV Assn. also is watching the results. And Jerrold Electronics is playing host to movie exhibitors, conducting tours and keeping-watch on what goes on.

• **Vital Problems**—The Bartlesville project also is focusing attention on certain vital problems in the pay-TV field. How to provide a steady flow of good entertainment? What are the problems involved in stringing cable around a major city? What are the costs involved in the whole operation? In recent months, as it became clear that entertainment was hard to arrange in quantity, that the costs were high, doubt began to hang over many of the more ambitious schemes.

Video at least has answered the entertainment problem with a solid base of first-run movies.

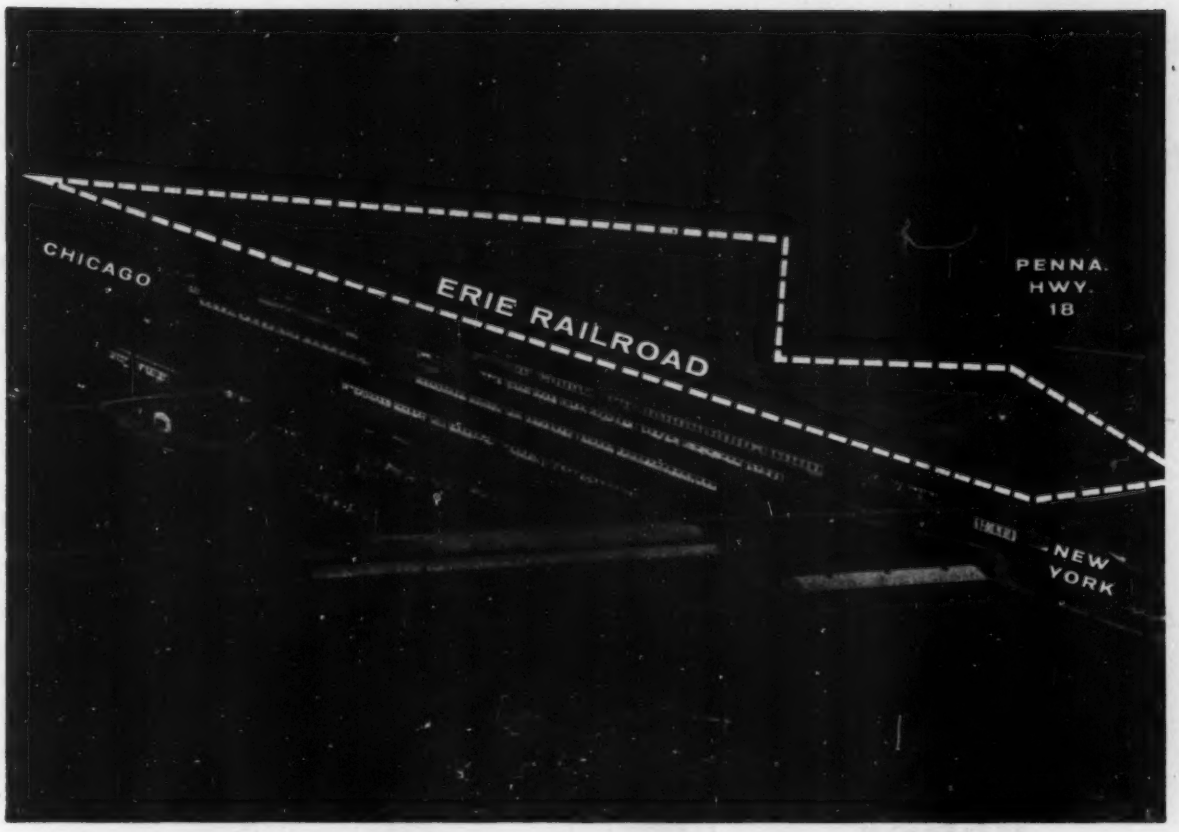
III. What Will It Cost?

Bartlesville also gives promoters an inkling about costs. Video has spent about $300,000 in setting up its operations. This does not include the better than $100,000 or so spent on the actual cable circuit itself, which is owned by Southwestern Bell Telephone Co. and leased to Video for about $1,000 per month per mile. In addition, it costs Video between $20 and $30 for each receiver wired into the system.

• **Big Investment**—These figures give you some idea of the difficulties involved in attempting wired pay-TV in major cities. Such projects will require a big investment and a lot of planning. Estimates for wiring San Francisco, for example, run from Skiatron TV Corp.'s low of $12-million (Skiatron is banking on a cheaper kind of wire) to a more usual figure of $50-million. In New York City, where many cables are buried underground, the wiring job is vastly more complicated.

Bartlesville also indicates the major role the various telephone companies will play in wired pay-TV. At a minimum, the phone company must lease pole space since the cost of putting up poles would be prohibitive for any pay-TV promoter. Southwestern Bell, which owns the cable system in Bartlesville, is the only phone company thus far to involve itself in pay-TV. Pacific Telephone & Telegraph Co., which serves San Francisco and Los Angeles, has no commitment for pay-TV. The phone company is in the business of renting facilities. If pay-TV operators can create a market for such facilities, Bell would probably provide them. But it has to be sure it won't lose on the substantial investments required. At present, Pacific T&T is sitting tight.

• **Collection Methods**—One basic ques-



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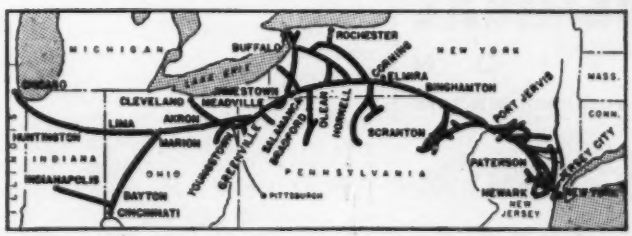

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Dear Sir: Please furnish us, in strict confidence, additional information on the above plant site in the Erie area.

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As a result, problems of preventing moisture condensation and passage of water vapor that are particularly troublesome and pertinent to peeling of exterior paints and to the fields of low-temperature insulation, air-conditioning, cooling and refrigeration, and building construction are more easily and effectively resolved. Application is in liquid form. Adhesion to metal, wood, glass, fibres, masonry and composition materials is excellent.

Upson vapor barrier coating thickness in film of .0012", allows water vapor transmission of only .2 perms*. It is easily applied by brush, spray or dip. Viscosity can be varied to meet requirements. Color is white, or can be matched as specified.

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tion Bartlesville may solve is the best method of collecting for programs. Video is charging a flat monthly fee. International Telemeter's wired system provides for a coin box, and Skiatron's for an IBM card that will register what pictures are watched. Video feels the public won't feed coins into a box. The opposite view is that people prefer to pay as they view.

More important may be the question of how revenue is split. Movie producers want to participate in accordance with the varying appeal of their pictures. For the present, Video is sidestepping this issue. Pres. Griffing believes a new formula should be devised for taking into consideration the total income and time involved, but says if film companies insist on sticking with the standard method of sharing based on how many people saw a particular picture, it will be possible to come up with a tally. At present, he has no agreement with the movie producers, is waiting to sit down with them six months from now to work the problem out.

• **Basic Necessity**—Most of the experts now feel that if the public comes through with its support—in the form of cash on the barrelhead—most pay-TV problems could be worked out. If the Bartlesville operation is a success, Video plans to go into 35 other towns in Okalahoma, Texas, and New Mexico, including cities the size of Tulsa and Oklahoma City.

Actually, among the pay-TV promoters, more people are crowding the wings than occupy the middle of the stage. International Telemeter is making a strong pitch for its wired TV system. Following showings in New York, Telemeter claims it is negotiating with a number of theater exhibitors for franchises in their areas. Paramount Pictures' Pres. Barney Balaban, at a meeting in New York last week, made it clear he is throwing the resources of Paramount behind Telemeter. This could make Telemeter a powerful factor in the future of pay-TV.

Another big contender is Matthew Fox's Skiatron TV Corp. Skiatron holds pay-TV rights to New York Giants and Brooklyn Dodgers baseball games. Fox says he intends to be in the pay-TV business in San Francisco by next April.

• **Full Circle**—One development shows quite clearly how far pay-TV has come since the concept first saw the light of day. The first come-on for pay-TV was the promise of freedom from commercials. Now some operators are beginning to hedge, and advertisers and agencies are looking interested. Video is not planning to put commercials on the movie channels now or in the future. But it has a third channel at its disposal, and that offers a tempting possibility for advertising, says Vumore manager Hays. **END**

Hearken to this woeful fable of the man who bought a "bargain" cable

A. C. Current, a budding E. E.
Bought cables from many a source
But he didn't take time to consider, you see
That some last longer than others, of course.

For some circuits *any* insulation will do—
For others, just one type is proper
But Okonite he never consulted, we rue,
As to which one should cover his copper.

It seems Mr. Current mistakenly thought
(Indeed, 'twas a total delusion)
That Okonite cable would cost him a lot
Whether made by strip, tape, dip or extrusion.

Only Okonite insulates cables *all* ways
So our prices are not always highest
And thus when you ask us what cable to use
Our recommendation's unbiased.

The price *does* differ, depending on methods
(The type insulation and how it's applied)
The proof of the pie is in service records . . .
Which we would have gladly supplied.

But A. C., in order to make things look good
Chose a cable he thought was a "buy"
It lasted, we hear, no more than a year,
Then blew him and his factory sky-high.

We hate to relate this horrible fable
But here is a moral for all:
If you should desire a superior cable
By extrusion or strip . . . by taping or dip
Just write us a letter, or call.

No matter *what* insulation or method of application you want (and we use them all) you'll get the best of its kind from Okonite. For a frank, down-to-earth discussion on cable insulating methods, write for Bulletin BW-1106-G, The Okonite Company, Passaic, N. Y.

where there's electrical power . . . there's **OKONITE CABLE**

4827

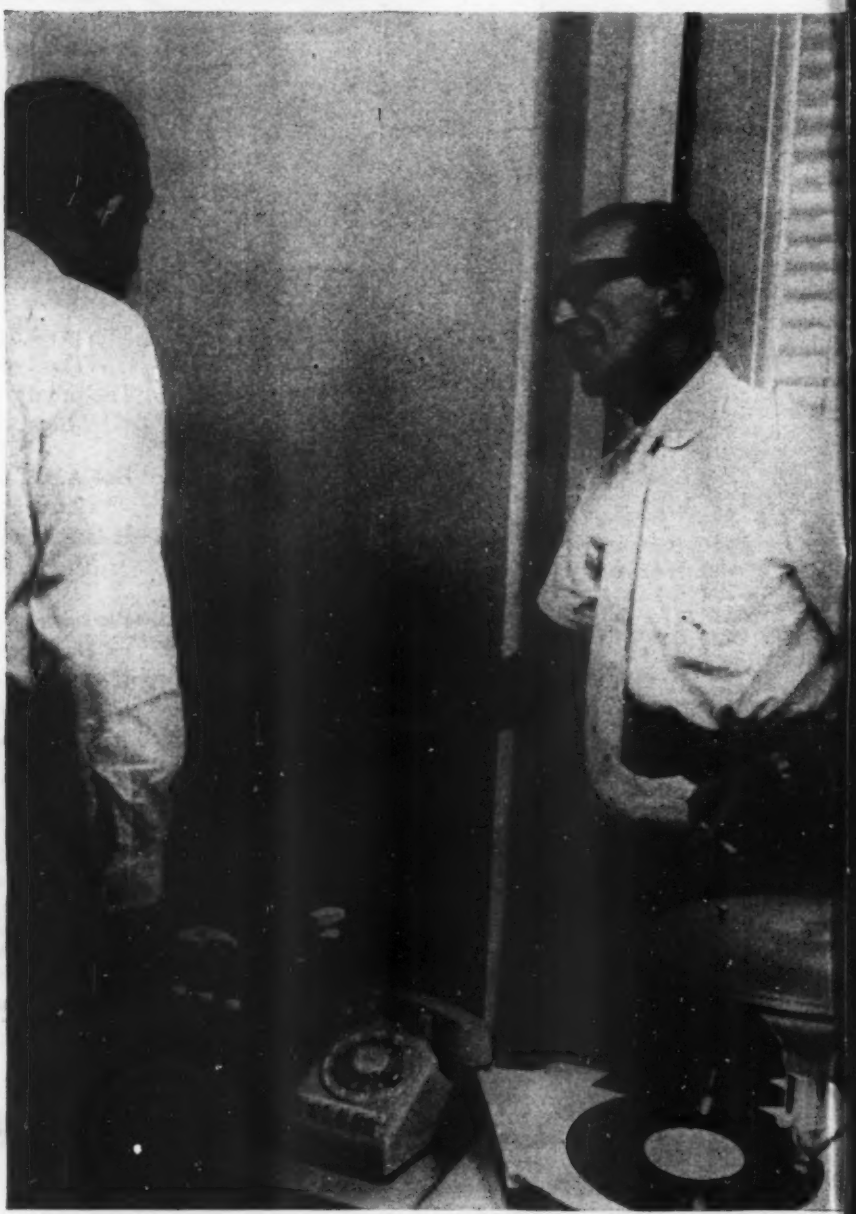
MARKETING

Smaller

Lew Chudd (picture, left), heads Imperial Records in a field that is garnering more and more of the expanding U. S. record business—the independents.

SPEND A DAY or so with Lew Chudd (pictures) and you come away with a little insight into a phenomenon of the record industry—the so-called in-

ON NEW YORK trip to seek talent and sales, Chudd previews a new record over telephone for a distributor in Detroit.



NEW PLATTER by Dorothy Shay, one of Imperial's stable, gets appraisal. Chudd wants arrangement altered a little.

Record Firms Spin to Success

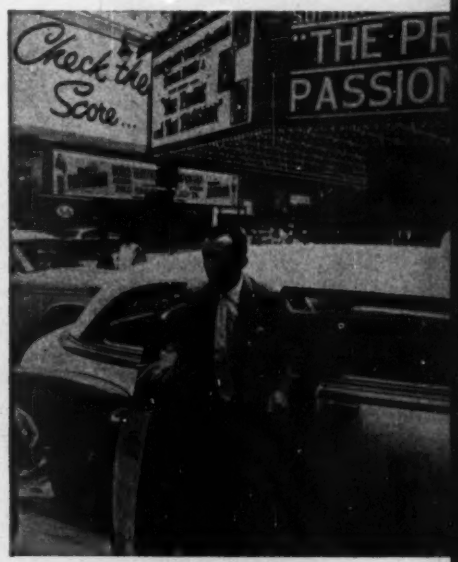
dependents that right now have the industry spinning. For Lew Chudd heads one of the leading independents, Imperial Records, Inc., headquartered in Hollywood.

Since he launched his venture in 1945 with a $10,000 investment, Chudd's business has grown into a company with sales that this year will amount to $7.5-million—and possibly double that next year. Besides managing five music publishing concerns, Chudd owns the entire company himself. He knows every phase of the business and directly supervises each of the operations required to put a record on the market.

His staff of 13—arrangers, promotion men, a billing clerk—works in comfortable but far from elaborate rented offices on Hollywood Boulevard. His overhead is virtually nil, because he farms out all the physical details of the record business.

• **On Its Own**—Imperial shares leadership of the independent popular record business with several companies, among them Dot, also of Hollywood. Dot's president, Randy Wood, expects his gross to reach $10-million by yearend, $15-million by 1958. But although Dot is operated autonomously, it is no longer an independent in the strict sense. Like

SONG PEDDLERS visit Chudd with packages of tunes they want Imperial to record and distribute. Out of this batch, Chudd kept one to hold for review, possible use.



LUNCH AT LINDY'S, in heart of entertainment world, is a chance to meet the trade.

GOOD DISTRIBUTORS are vital. Chudd and his New York manager confer with partners who handle Imperial in New York.

(Story starts on page 48)

many that begin as independents, Dot has just hooked up with a larger organization by becoming a subsidiary of Paramount Pictures.

Chudd, however, has resisted affiliation with a bigger outfit. And the rewards have been handsome.

I. A Typical Independent

Chudd himself is typical of the independent operator in any field—a fast-moving, hard-working entrepreneur with an ear for what the market wants in popular music. He maintains two permanent offices outside Los Angeles, one in New York, and the other in New Orleans. These act as anchors for distribution and bases of operation for Chudd. He is on the road about 10 days every month (100,000 miles a year), when he usually makes a complete cross-country swing—Dallas, New Orleans, Chicago, and New York.

His day in Hollywood starts at 7 a.m. six days a week. Since 7 is early, he begins by telephoning people already at work, such as his 38 distributors around the country and the all-important disk jockeys, who must be persuaded to push Imperial's records over the hundreds of others they receive each month. By 9 a.m., when the small staff arrives, he's ready for problems in his own back yard.

• **Necessary Gamble**—Although Chudd spends most of his day selling, he keeps a running check on other details: new album jackets, promotion literature, the production schedule in the half dozen or so pressing plants he uses. In the trade, Chudd has a reputation for "pressing ahead," just to avoid being caught short on supplies of a

UNKNOWN night club artist, Jerry Samuels, 19, gets tryout for an Imperial contract . . .

. . . PLAYBACK lets Chudd hear how Samuels would sound . . .

. . . CHUDD'S VERDICT: no dice. He needs more experience.

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Your biggest expense in any welding operation is tied up in labor and overhead costs.

How much? Well, it's estimated that 86¢ out of every welding dollar is spent on these two factors.

P&H welding positioners are the tool that can reduce these costs. They give your weldors push-button control of weldment position . . . speed handling . . . eliminate cramped welding postures . . . ease worker fatigue

. . . allow your men to work in the welcome, more productive down-hand position.

Workers are happier — quality improves, too. And weldors stay where the work is pleasant and easy — with less manpower turn-over as a result.

Adds up, doesn't it? Find out more about these money-saving machines. Write to Dept. 327A, Harnischfeger Corp., Milwaukee 46, Wisconsin.

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WHY GIVE AWAY MARKETING STRATEGY IN AN ADVERTISEMENT? Our objective is not to give aid and comfort to competition, but rather to provide helpful information for businessmen who must reach specialized markets. Turbine users, we believe, will also find this message of interest.

HOW TO BE A BIG FROG IN

By ARTHUR F. REINKING, General Manager, Steam Turbine Division, Worthington Corporation

To capture the lion's share of a specialized market takes a special approach. Here's how Worthington does it with high-speed turbines:

"Your price is high" said one of our newer customers recently. In his own way he summed up most of the reasons why the Worthington high-speed turbine outsells all others. For the leader usually refuses to compromise quality for price.

Here are a few of the ways we have found helpful in adding extra value to a product sold in a concentrated market.

Invest in service. A specialized market is usually characterized by a relatively small number of "repeat" customers that add up to a big volume of business. Hence it's important to be able to thoroughly analyze and take care of the service requirements of each customer.

With a division operation keyed to serve a specialized market, we at Wellsville have set up systems that assure prompt and personal attention by engineers with authority to get fast action.

Invest in people. No machine demands as much skill and patience to build as a high-speed turbine. Here, where tolerances are ultra-important—and turbine failure can shut down a multi-million dollar plant, we know craftsmanship is ultra-important. Worthington has made the care and raising of skilled craftsmen its number one management objective. From special on-the-job training to recognition for outstanding performance, the men who build Worthington turbines receive day-to-day attention.

Invest in product. The surest way to go broke fast is to add where it costs but doesn't count. By concentrating on those attributes that contribute to the product's function and quality you add value that pays off in performance.

In high-speed turbines our major goal is reliability. For speeds above 8,000 rpm,

FASTER THAN THE SPEED OF SOUND

A SPECIALIZED MARKET

shaft and wheels are machined from a single forging. Often, double flow exhausts are used to avoid highly stressed wheels and blades. More expensive, of course, but this construction adds extra dependability. In governors, bearings, packings and other critical parts, reliability always comes first, cost second.

Invest in the future. To be the leader tomorrow as well as today takes a continuing investment in research and development. At Wellsville, we commit men and money to both market and product research and testing in order to be ready with the right product when the market arrives. For example, we've spent nearly two years developing a simple and reliable emergency overspeed trip to operate at tomorrow's machine speeds. When 20,000 rpm comes along, we'll be ready!

Because our goal is reliability, every improvement—no matter how promising—is thoroughly tested before it is introduced.

At Wellsville, Worthington also builds the high-speed turbine's first cousin—the turbine generator. By using many of the same techniques outlined here, Worthington has developed a reputation as a custom builder of a quality machine.

• • •

If you would like to know more about Worthington and the turbine field, won't you write for a copy of our booklet "Specialists in Turbine Progress." Address Worthington Corporation, Steam Turbine Division, Wellsville, N. Y.

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hit. His initial pressing orders often run up to 500,000. This is a gamble—but a necessary one.

"You don't get a second chance to sell a record," he says. "If that record isn't on the shelves when the customer walks in the first time, you've lost a sale." Once, when a truckers' strike threatened to leave all Atlantic Seaboard dealers without any Imperial records, Chudd hired a Greyhound bus and delivered the records himself.

• **Talent Scout**—The search for talent and material keeps Chudd daily on the run. His network of friends—distributors, disk jockeys, and the entertainment world—often tips him off to something that sounds good. Chudd says he has 50 pairs of ears listening for him all around the country.

Each day's mail is likely to bring an acetate "dub" recording of an unknown artist. If the dub sounds promising, Chudd may fly to hear the artist, or have him flown to Los Angeles.

II. How Independents Grew

In many fields today, the big companies are always getting more of the market. But in the record industry in the last few years, this hasn't been true. Smaller companies such as Imperial have been grabbing a bigger share of an evergrowing market.

It's hard to come by industry figures on which everyone will agree. But the independents claimed 15% of the market five years ago, and they say this year they'll wind up with half, maybe more. This is pooh-poohed by the majors—meaning RCA Victor, Columbia Records, Decca, and Capitol (which itself grew up from independent to major in the last 15 years). A third of the market is more like it, they say. Victor and Columbia alone do nearly half the business, says a spokesman—or, to quote him more precisely, "a little less than not quite half."

But whether the independents have a third or a half, their growth has been fast. Happily for all, this year's pie promises to be king size. Retail sales of records in 1956 came to slightly more than $300-million. For 1957, the trade is talking of $400-million.

• **Teen-Age Public**—The independents apparently have cashed in on a major phenomenon: the new teen-age market. As the population wave rolls up the years, the children born during the war and early postwar baby boom are now reaching the age of spending on their own. The independents, especially, are capitalizing on this fact.

Phonograph records are thus one of the first industries—and won't be the last—to feel the impact of the population bulge now showing up in one sector of the market, a sector with its own quirky tastes.

For example, the widespread teen-age endorsement of "rock 'n roll," more than any other factor, accounts for the rise of the independent. Music with a strong beat has always been the special province of the independent. Until recent years, it ranked too low in popular favor for the major companies to bother with it.

• **Profits From the Fringe**—But independents have always gone after the fringe markets, where they can make a small—but nonetheless real—profit because of their lack of overhead and their ability to make quick decisions.

That's how Chudd got started. He had had several jobs with the National Broadcasting Co. and a wartime post with the Office of War Information before he broke into records. His first effort was in Latin music, for which there was a market the majors weren't meeting because their pressing plants were still busy producing V-disks for the services. Chudd flew to Mexico, recorded all the Latin music he could find, then came back to Hollywood and set a friend up as a pressing plant operator. He grossed $90,000 the first year—and in the 12 years since, he's been in the black every year.

• **Rocking, Rolling**—From Latin music, Chudd moved into Western—where his first record was a hit. At the same time, he issued a series of square dance disks, since this was another small corner of the market then neglected by the majors. From there, he jumped into still another fringe, rhythm and blues, now known as rock 'n roll. Here Chudd came up with the artist who was to prove his prize talent: a New Orleans piano player named Fats Domino.

Behind this star, Chudd has been building a diversified roster of talent. He now has 34 artists under contract, including Roy Brown, Slim Whitman, and, recently, such pops artists as Dorothy Shay, the George Liberace orchestra, and Jack Fina.

III. Independents' Strength

One major company explains the independents' growth as a simple increase in numbers. The American Federation of Musicians lists upward of 1,500 record companies, plus the big four. Hundreds more of a local nature operate in small cities and towns. Says one authority: "Anyone with $5 and a guitar can be a record company today."

It's true that most smaller companies operate on a shoestring, and the mortality rate is frightening. Yet for every one that dies, a newcomer springs up. The net increase runs perhaps a dozen a year.

At this point, the major can no longer afford to ignore the competition, or the markets they try to serve. Of the top 100 records listed weekly by Bill-

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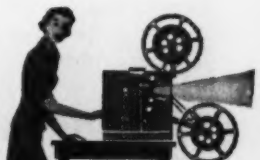

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"...'when it comes to singles they are just more clever than we are . . . they have that magic touch to pick a hit' . . ."

STORY starts on p. 48

board, the independents are consistently scoring 65 to 75. In sales, many of these exceed the million mark—the industry's standard for a pops hit. One artist, Imperial's Fats Domino, this month will register his 25-millionth sale, an accomplishment that is topped only by Bing Crosby and Gene Austin.

• **Stress on Material**—Chudd thinks one reason for the independents' success is their emphasis on material. He thinks the pops market today is more interested in the music than in the artists who sing it. On this premise, the independents didn't let themselves be stymied by lack of money to hire big names. They built their own name artists.

Some of the majors grant that the successful independents have this asset. "When it comes to singles, they are just more clever than we are," says one executive of a major company. "They have that magic touch to pick a hit."

Perhaps the reason for this is that the small company concentrates on its specialty. Almost everyone agrees this is the biggest difference between the majors and the independents. The majors promote and sell a big catalogue that touches all fields of music. The independents, with a far smaller catalogue, promote perhaps only a record at a time in a rapid-fire campaign. A major company may put out six new records a week. By contrast, Imperial issues about 75 a year.

• **Edge in Promotion**—Thus, in promotion, where the majors admit the independents have done well, a company such as Imperial can put all its effort into pushing the latest items toward hit sales. They are free to concentrate because they farm out so much of their production (although Imperial is now planning a new office building of its own to include a recording studio—which will move it a major step away from the ordinary independents).

Some independents think they have an advantage over the majors in organization. With their small size and lack of corporate red tape, they can start from scratch and have a new record on the market in a matter of days if they want to, while the planners for the major companies are still weighing a decision.

Then, too, the typical independent such as Imperial has no stockholders to answer to. Chudd can play his hunches. More important, he can make a profit on items about which majors might be hesitant. Chudd says that he can break even on sales of 10,000 copies of a record; a major, he estimates, must sell 45,000.

• **Where the Money Goes**—The average gross sales for an Imperial record total $100,000. The average outlay before distribution is only $500 for musicians and $50 to record one number (although it can be far more expensive, depending on the artists used—a full orchestra costs a lot more than the average Western singer).

Royalties to the artist average 4%, or $4,000 on a $100,000 record. The pressing cost is 13¢ per record, regardless of how many are cut. This job is done for Imperial by independents and by Victor's custom pressing service. It includes making the disk, attaching the label, and inserting it in the paper jacket.

• **Easier to Sell?**—Independents also feel they have an advantage in the way they sell, without the traditional inhibitions of the majors. The majors tend to phrase this another way: The independents may just not respect the ethics of the industry quite so much. While every company, large and small, disclaims any part of such activity, one hears dark stories of payoffs to disk jockeys (some of whom own their own recording companies) and outright gifts of records to dealers to get sales moving.

It's certainly true that distribution can be a tough problem for the independent. Companies such as Columbia and Victor have their own distributors sewed up—Victor through RCA appliance distributors, Columbia through other appliance distributors handling only their records. The majors see both plus and minus values in their setup. An RCA man, say, will put his full record-selling effort behind the Victor label. But he sells appliances, too, and sometimes records may "get lost."

• **Half the Battle**—For the independent, there are plenty of distributors available—how many, no one knows. If an independent can latch onto a good one, he has won half the battle. But with 1,500 labels to choose from, the manufacturer-distributor relationship is far shakier for the independent than for the majors, with their one-label distributors. This means that the independent can't afford to slip; he must keep one good record coming after another.

The independent also can't afford to dictate strict limits on returns from a distributor. So he may find floods of unmarketable records coming back to his office. But the dealer who knows he won't have to bear a loss feels more kindly toward the company.

• **Advantage for Majors**—In one recent

If it goes through pipe anywhere in the world—

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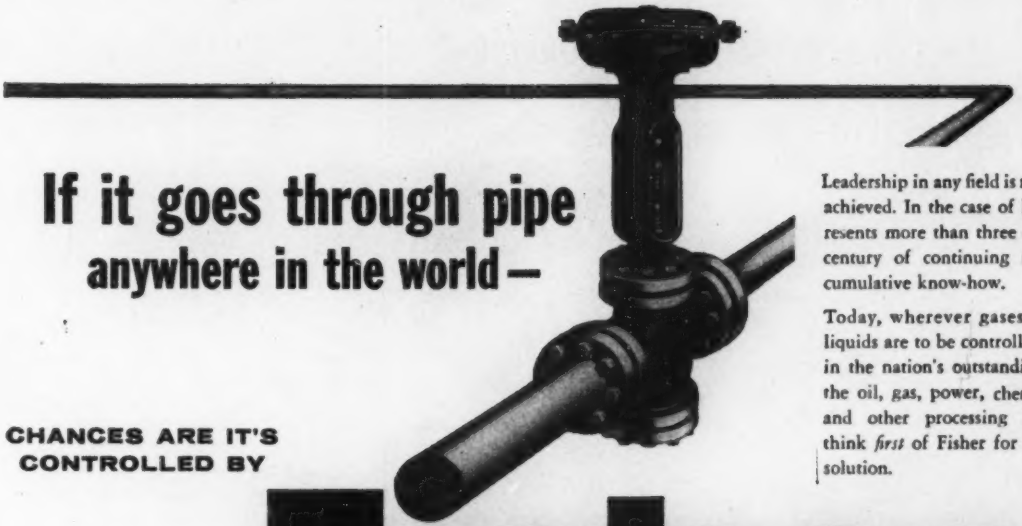

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". . . 'there's always room for another recording, if it's a good one' . . ."

STORY starts on p. 48

distribution development—the rise of the rack jobber—the majors think they have a distinct advantage. The rack jobber buys from the distributor and services the retailer, especially the supermarkets, with his own goods and display material.

The rack jobber's type of selling depends a lot on brand names, such as the majors offer. Columbia has just brought out a new label, Harmony, selling at $2 retail and designed primarily for rack jobbers.

Independents such as Imperial do only a little business with rack jobbers, but they insist they can use the method. If a record is hot, the jobber will buy despite the label.

IV. Problems of Independents

The majors think that livewire operators such as Chudd have probably won as much of the market as they will get. For one thing, there is now a swing in the industry toward production of albums. It is estimated that they are taking 65% of sales. And the independents' chief strength has been in singles.

The cost of producing albums, with their expensive color covers, has kept most independents out of that market in any big way. However, Chudd saw the trend early and began turning out motion picture soundtrack scores. Now, he says, he is planning to release albums by Dorothy Shay and George Liberace.

Along the same line, Dot has recently hired two of Capitol's album experts to beef up its own production. But the smaller independents can't swing album deals, where the cost ranges from $5,000 to $100,000.

• **Long-Hair Stuff**—The majors think they have a firm hold in the classical field, too. Even so, some of the successful independent producers of classical disks—such as Westminster, which does 95% of its business in this line—won't agree they will stand still from now on. Says a Westminster official: "There's always room for another recording, if it's a good one."

Right now, Chudd is building a classical catalogue. But here again he is taking the traditional road of the independents. He is recording material that doesn't offer volume enough to attract the majors. Like other independents, he is going in for lesser-known artists, too, since it may cost anywhere from $5,000 to $15,000 simply to get a big orchestra into the recording studio. END

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With any strapping tool but this one, it takes two hands and sometimes separate tools to tension and seal strapping. But this man is using Signode's famous one-hand, one-piece Model SFC. It's so light and well-balanced that he can easily hold and operate it with one hand — even on the side of a package. His other hand is free to position the strapping and turn the package or move it on to the next station. Strapping goes faster . . . naturally! Lending a hand to speed your strapping is one more way Signode can make your product cost less to handle, store, ship and receive. See the Signode man near you, or write:

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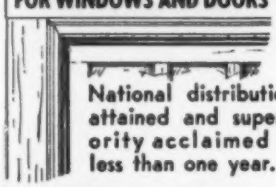

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In Marketing

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Power Company Peps Up Appliance Sales By Tacking Monthly Payments on to Gas Bill

An Arkansas power company has come up with a novel financing plan whereby customers may pay for gas appliances along with their monthly gas bills. Arkansas Louisiana Gas Co. developed the idea following its recent acquisition of Servel, Inc.'s All-Year Air Conditioning Div. (BW—Aug.17'57,p52). Servel is pulling out of the gas refrigerator and air-conditioning field.

Arkansas Louisiana Gas feels that the fact that many dealers in small towns can't handle installment notes prevents potential sales of gas appliances. The company has worked out a plan under which consumers may buy appliances from their dealers and pay for them along with the monthly gas bills. The power company's financing charge will run around 6% per year. More than 400 appliance dealers are already participating in the program.

Arkansas Louisiana is now selling three makes of gas air-conditioning units, but is expected to switch exclusively to Servel.

The gas appliance industry generally is feeling the slack appliance market. Based on a survey of 147 makers, the Gas Appliance Manufacturers Assn. estimates that sales this year will fall about 11% below 1956 but rise slightly next year, around 2% over 1957. Edward Martin, GAMA's marketing and statistics director, points out that major appliances and equipment have been hurt by the lag in housing starts and family formations.

• • •

Wedding of Two Ad Agencies Boosts Them Into Top 10; a Third May Join the Family

A major new advertising agency was formed last week with the merger of Erwin, Wasey & Co. and Ruthrauff & Ryan, Inc. The new agency—Erwin, Wasey, Ruthrauff & Ryan, with annual billings of $80-million—will rank among the nation's top 10. Last year, according to Advertising Age estimates, Erwin, Wasey billed some $41-million and held 18th place, and R&R billed about $39-million for 20th place.

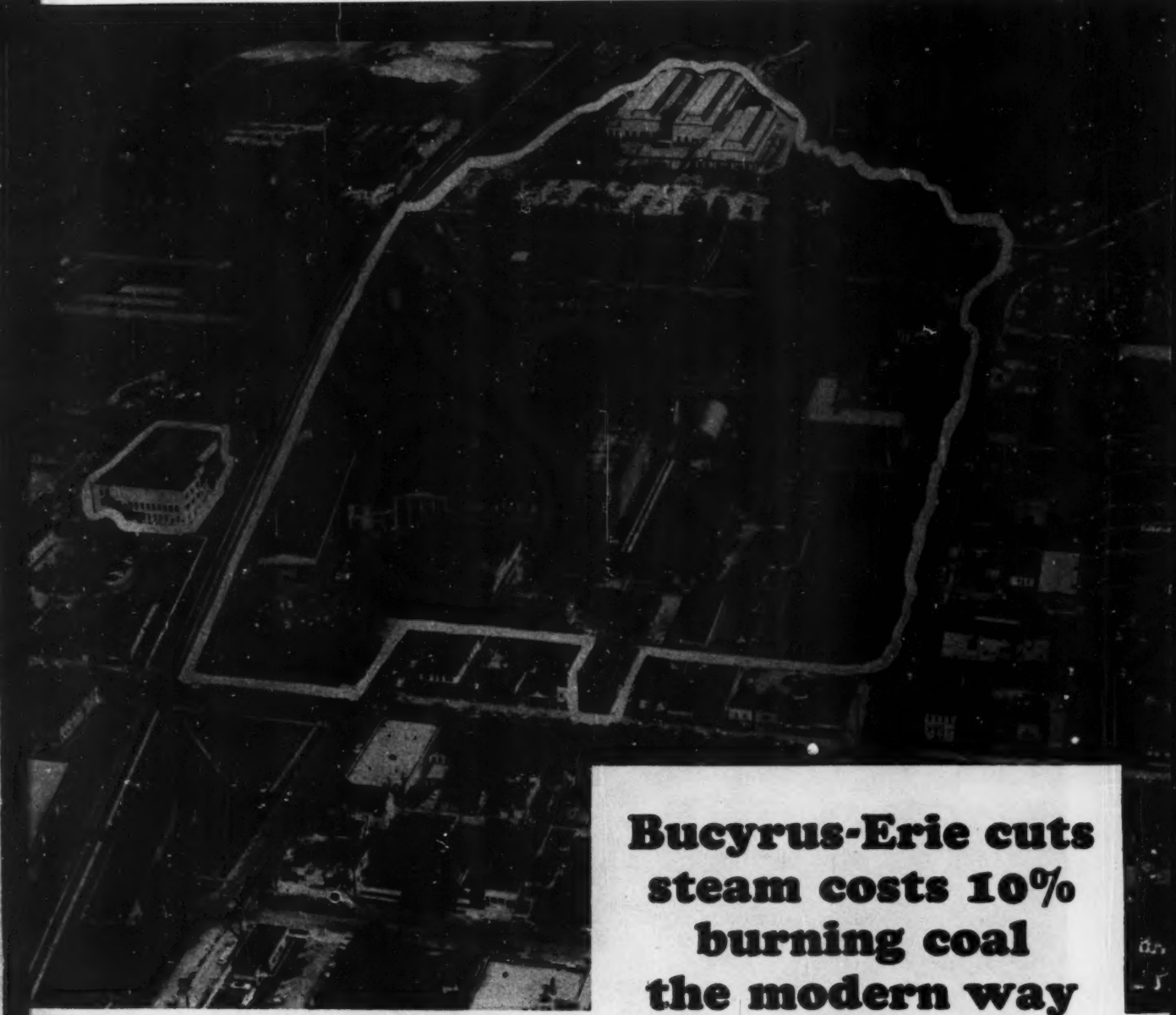
The merger reportedly may include a third party, too—Chambers & Wiswell, Boston agency that has just lost the Northeast Airlines account.

President of the new agency is David B. Williams, former president of Erwin, Wasey. Robert M. Watson, former board chairman of R&R, occupies the same position in the new outfit, and F. Kenneth Beirn, former R&R president, is senior vice-president.

Over the postwar years, Erwin, Wasey has steadily increased its billings. In 1947, it billed $25-million; in 1952, $30-million. Last year it added such clients as American Chicle Co., Van Camp Sea Food, and Seth Thomas Div. of General Time Corp.

R&R billings declined from a 1951 peak of $50-million to $44-million the next year, when it lost such important clients as Chrysler and Lever Bros., and the slump continued.

In the last year, R&R has taken strong steps to regain lost ground. It brought in Beirn last year after the Biow-Beirn-Toigo agency broke up, and early this year it made other top-level executive changes.



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Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available. • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar. • Automatic coal and ash handling systems can cut your labor cost to a minimum. Coal is the safest fuel to store and use. • No smoke or dust problems when coal is burned with modern equipment • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

Bucyrus-Erie Company, South Milwaukee, Wis., had a steam generation problem. Not only was original equipment deteriorating but capacity proved inadequate for expanding plant facilities. Working with consultants Gates, Weiss and Kramer, of Milwaukee, the company decided to modernize its power system.

Today the power plant at Bucyrus-Erie is almost completely automatic and utilizes the newest coal-burning and handling equipment. In addition to increasing steam generating capacity 85%, this modernization program has lowered annual steam production costs 10% and labor costs 35%. Burning coal the modern way has increased steam quality, improving production processes and heating throughout the plant.

For additional case histories on burning coal the modern way or for technical advisory service, write to the address below.

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This is one example of Waldorf's contribution to the science of automatic navigation. Waldorf also engineers and manufactures complete systems and instruments in the fields of hydraulics, electronics, and electro-mechanics. These products include instruments, computers, precision controls, test devices, simulators, servo-mechanisms, valves and actuators for industry and the Armed Forces.

Waldorf will undertake creative solutions for your problems, military or commercial, in the development and production of precision instrumentation and controls. For brochure and further information write to Waldorf Instrument Co., Huntington Station, Long Island, New York.

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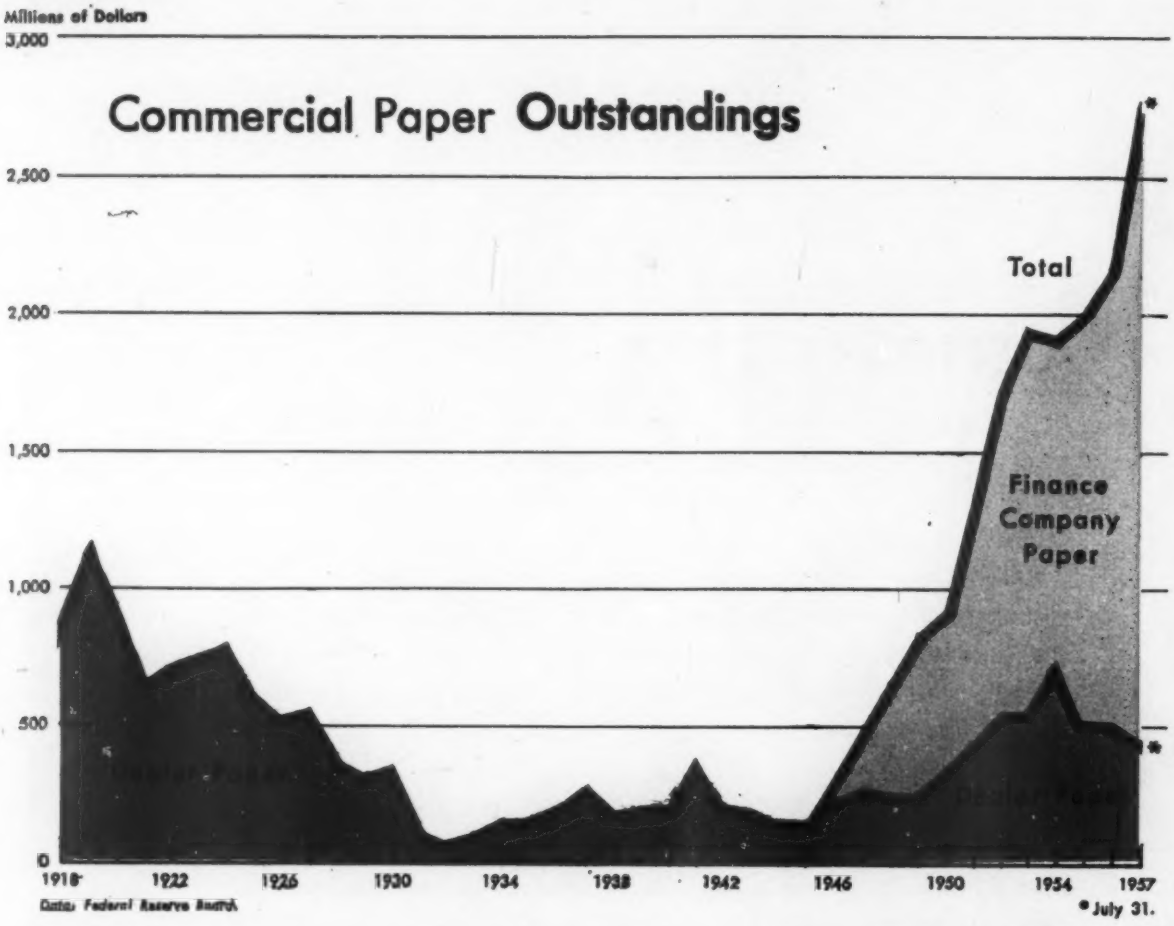


Old-Timer Outstrips Its Big Rival

Commercial paper market—oldest public short-term money market in U. S.—isn't so big, but it's growing faster than banks' short-term business loans. Many companies turn to it for funds as roads to bank credit get narrower and rougher.

THE MARKET for commercial paper is flourishing as never before. Like other important segments of the national money market—such as bankers' acceptances (BW—Aug.24'57,p92) and new securities issues (BW—Aug.31'57, p47)—it, too, appears to be on its way to another record year (chart). It's a market that's not well known to the general public, although many corporate treasurers and bank loan officers have long been familiar with it.

The commercial paper market essentially is an alternative or supplementary borrowing avenue for corporations seeking short-term money advances or desiring to spread their loans among a variety of lenders instead of depending exclusively on borrowings from their own depository banks.

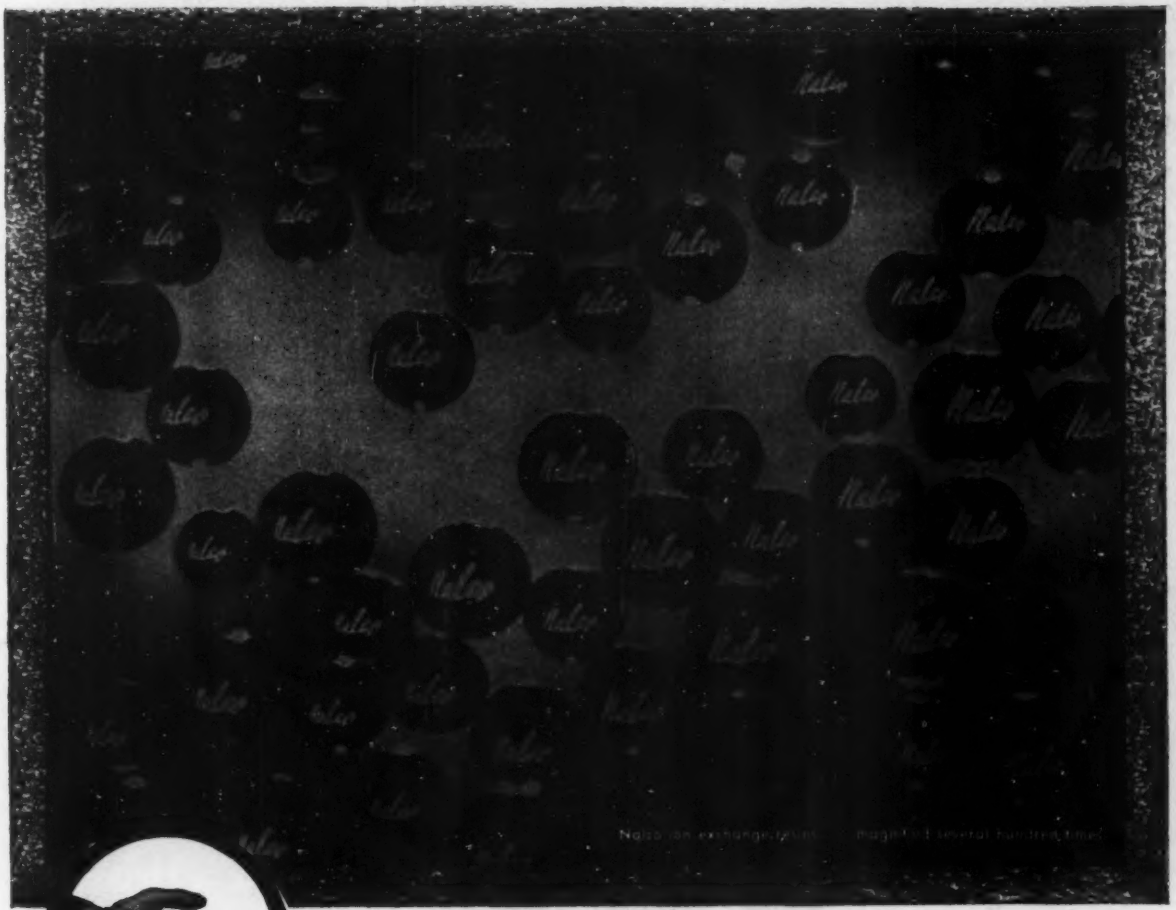
At last reckoning, commercial paper outstanding stood at an all-time high of about $2.8-billion, substantially above the $2.6-billion figure at the same time a year ago. Outstandings have risen steadily since the end of World War II. And unless business generally should drop sharply in the months ahead, this upward trend is likely to continue for some time longer.

• **Small, but Moving Fast**—If you measure the importance of the commercial paper market by volume, it seems insignificant compared with other individual money markets in the U. S. Right now, commercial paper outstandings represent less than 2% of all short-term corporate credit on lenders' books.

But you can't judge its importance by size alone. Take the matter of growth. Over the past decade, its rate of expansion has outstripped the growth rate of short-term business credit extended by the nation's commercial banks. Business loans written by the insured commercial banks in the 10 years ended Dec. 31, 1956, including commercial paper, increased about 175%. In the same period, commercial paper outstandings, taken by themselves, rose 519%.

• **Made in U. S.**—Commercial paper is a note, or IOU, offered in the open market to lenders by business firms. The commercial paper market is no Johnny-come-lately, but the oldest public short-term money market in the country. It's a distinctive feature of the U. S. financial system; no other country possesses anything quite like it.

Maturities of the notes "traded" in this market range from about one month to 18 months, although most of them mature in four to six months. Denominations vary with the preferences of the buyers, but commonly run at about $5,000 per note, or multiples of



These Nalcite Ion Exchangers are

Better Traps . . . for Metal Ions

They are near perfect spheres, pinhead size or smaller . . . yet these Nalcite HCR cation exchanger beads are *powerful traps* for metal ions you want removed from any liquids or solutions.

Ability of Nalcite HCR to perform efficiently at temperatures up to 250° F has opened a whole new field of ion exchange processing possibilities. Teamed with a Nalcite anion exchange resin, Nalcite HCR deionizes process liquids completely—giving, for example, the chemical equivalent of distilled water at a fraction of distillation cost.

There may well be a place in your operations where efficient, economical ion exchange can help you improve products, speed processing or recover valuable trace metals. Nalco will welcome an opportunity to help you explore the possibilities.

TYPICAL USES FOR NALCITE ION EXCHANGE RESINS

- **Production of demineralized water . . . for high pressure boilers . . . for nuclear reactors . . . for plating rinses.**
- **Recovery of chrome from spent chrome plating solutions.**
- **Separation and purification of rare earth metals not readily prepared by other processes.**
- **Disposal of radioactive waste by collection of "hot" constituents from plant waste waters.**
- **Purification of acid pickling solutions by removal of metallic contaminants.**

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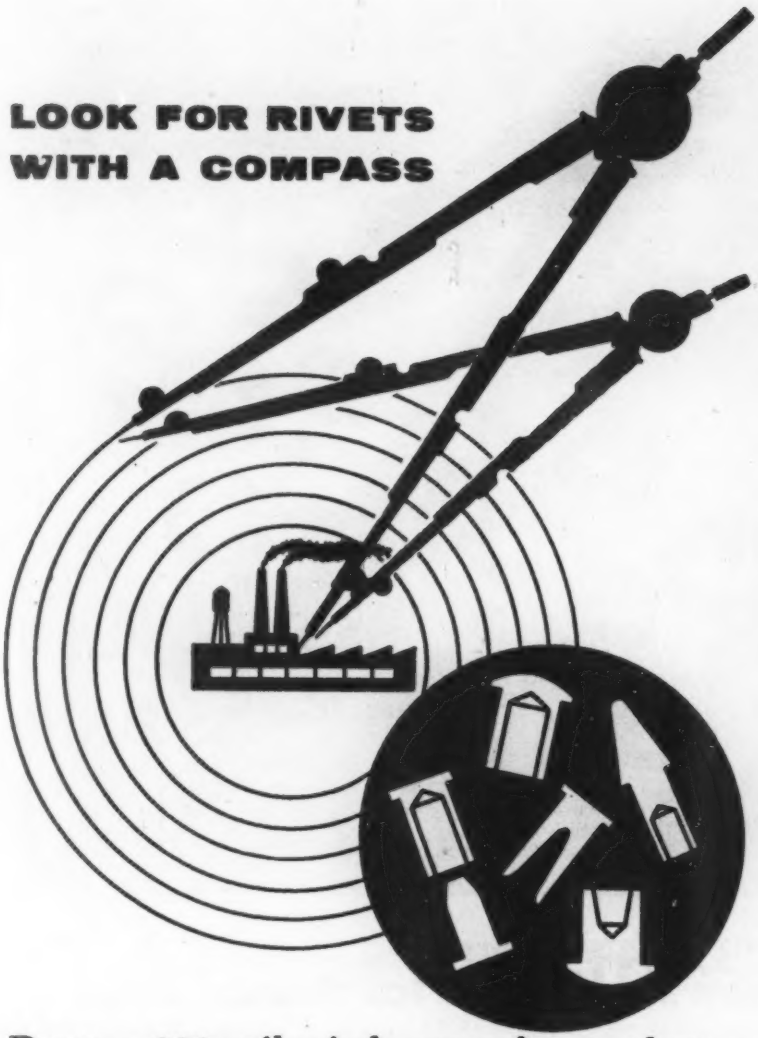
LOOK FOR RIVETS WITH A COMPASS



Draw a 300-mile circle around your plant —

You're almost certain to circle one of Milford's five manufacturing plants!

There's hardly a metalworking plant in the country that isn't within overnight trucking distance of one of Milford's five manufacturing plants. And 20 sales offices add to the convenience of ordering and *getting* rivets when you need them NOW!

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... to take full advantage of automatic assembly
... to cut delivery time and production costs
—get in touch with Milford first!

THE MILFORD RIVET

MILFORD RIVET & MACHINE CO.

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ELYRIA, OHIO • AURORA, ILLINOIS • NORWALK, CALIF.

"... most commercial paper is not drawn to finance a specific sale or transaction ..."

STORY starts on p. 64

$5,000. The paper is usually signed only by the borrowers, and is unsecured. Occasionally, however, a note is backed by stocks, bonds, or warehouse commodities.

Unlike trade bills or bankers' acceptances, commercial paper is not drawn to finance a specific sale or transaction. Mainly, it is used to provide additional working capital for meeting payrolls, for purchasing materials, and for paying general operating expenses during periods of seasonal business activity. Indeed, most commercial paper issued is of a seasonal character.

• **Finance Companies' Role**—At one time, the commercial paper market was entirely supplied by manufacturing and trade concerns. Then in the 1920s, finance companies started selling paper to investors in modest amounts. Since the last war, their growth has been meteoric. And, as the chart shows, the finance companies now account for the bulk of the outstandings. Most of their paper is sold by the five largest companies in the field (General Motors Acceptance Corp., C. I. T. Financial Corp., Commercial Credit Co., Associates Investment Co., and General Electric Credit Corp.).

The "big five" sells its paper directly to buyers. The rest is sold through dealers, of which Wall Street's Goldman, Sachs & Co. is the largest, handling between 60% and 75% of the total dealer paper (BW—Apr.9'55,p50).

• **High Interest Parade**—Obviously, as an integral segment of the nation's money market, commercial paper's rate structure rises and falls with fluctuations in money demand. So as you'd expect, the rates now commanded in this market, as in all other borrowing areas, have reached levels not seen for many years.

On Aug. 7, the offered rates, or yields, on open market commercial paper hit their highest peak since the early 1930s. Following the rise in the prime rate on commercial bank loans to 4½% (BW—Aug.10'57,p27), dealers hiked their rates by ⅛%. That brought to 4% the rate on prime four-to-six month names. The notes of equally good but less well known business concerns were quoted at 4% to 4⅛%. The big finance companies maintained their rates at 3¾% to 4%, depending on the maturity of the paper sold.

• **Attractions**—The major finance companies have little trouble selling their paper to investors even though their rates are a shade below dealer rates. That's partly because an investor can

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EFFICIENCY...ECONOMY...

Jules Weber, Inc., New York food distributor, uses
TRANSPORTER as part of Automatic "Team"
to increase capacity of storage area by 69%

Automatic TRANSPORTERS are available in many different types...low and high lift platform or pallet...fork, straddle and retractable mast type stackers...tractors. These short, compact, trucks perform all handling functions of standard rider type trucks, yet cost considerably less.

In all models, the flexibility, economy and dependability of electric power at its best are combined with many exclusive operating advances. Capacities range from 1,000 to 10,000 lbs. depending upon the model. A complete line of attachments is available.

But see for yourself the superiority of Automatic TRANSPORTERS. Figures below are for low lift pallet model comparison but other TRANSPORTERS are equally impressive.

CAPACITY...		TRANSPORTER 4,000 LBS.	TRUCK A 4,000 LBS.	TRUCK B 4,000 LBS.	TRUCK C 4,000 LBS.	TRUCK D 4,000 LBS.
SHORTER	Overall length less load...	21½"	25¾"	26¾"	23¾"	24"
MANEUVERABLE	Maximum Overall width	29"	32"	32"	27"	32¼"
BETTER INCHING CONTROL	3 Speed Control	Yes	No	No	No	No
MAXIMUM HEAT PROTECTION	Class H Silicone insulated motor	Available	No	No	No	No
MORE EFFICIENT	Hand or foot lowering control	Both	Hand Only	Hand Only	Hand Only	Hand Only

WRITE TODAY FOR SPECIFICATIONS & CASE HISTORIES of installations similar to your own. Also get the facts about Automatic's exclusive lease or purchase plan.

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Division of The Yale & Towne Manufacturing Company
Dept. P-7, 93 West 87th Street, Chicago 20, Illinois

get almost as good a return from finance company paper as from dealer paper, as a result of the dealer's "spread." Goldman, Sachs, for example, buys paper from a borrower at, say, a 4% interest rate (on a discount basis), and then endeavors to sell it to an investor at 3¾%. The ¼% spread is the dealer's profit. (Formerly, dealers also charged a commission of ¼%, or $2.50 per $1,000.)

Another reason investors may be partial to directly sold finance company paper is this: The big finance companies are always ready to meet a buyer's requirement as to maturity and amount, and sometimes will even permit a lender—faced with a sudden need for money—to cash in on such notes he holds before maturity. However, the finance company doesn't obligate itself to do so when the note is sold.

• **Competitor**—Obviously, in the past some banks have been unhappy about activity in the commercial paper market. This was particularly true in the days of easy money. Whatever borrowing was done through the commercial paper market, a few bankers felt, was loan business lost. What's more, commercial paper rates are usually lower than bank loan rates, and some bankers privately denounced the open market as unfair competition.

Yet the very competition offered to other sources of short-term credit by the commercial paper market is perhaps its most important role for the money market generally. Borrowers benefit from the competition of the open market because of its tendency to keep money rates down. Bankers also benefit, because the open market provides a temporary outlet for surplus funds of a bank when the demands of its customers aren't sufficient to take up all of its loanable funds.

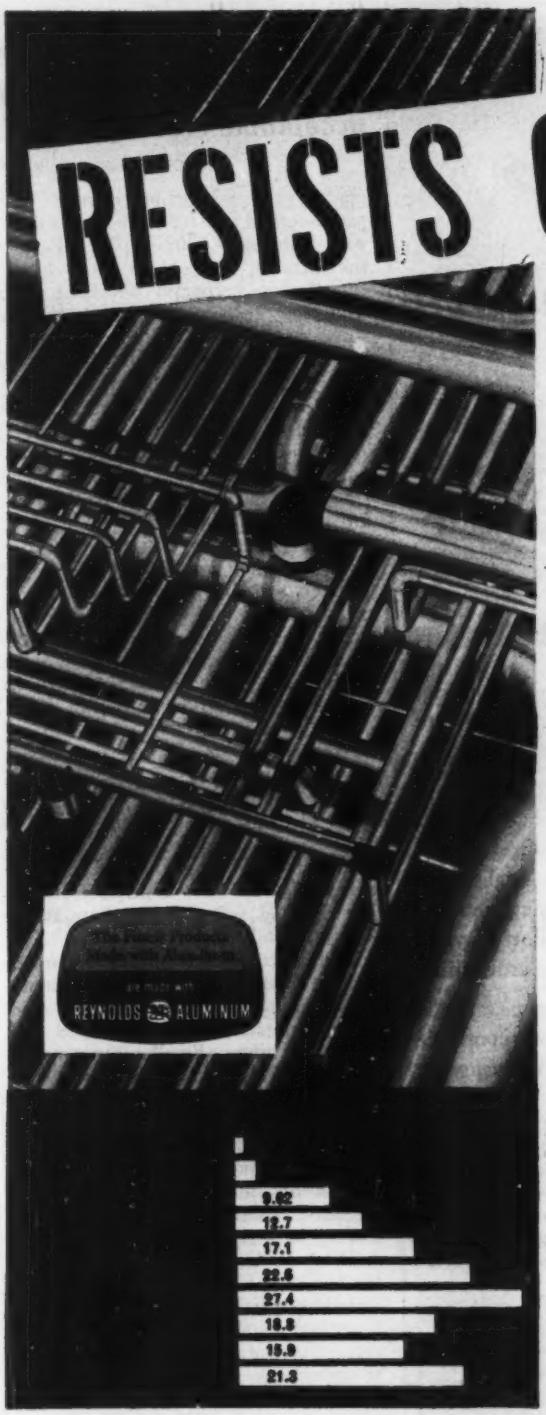
A small bank, in a Maine resort, can invest its temporary summer cash surplus in the paper of a Seattle department store. This results in a wider distribution of credit, and this in turn tends to have an equalizing influence on interest rates in different parts of the U.S.

• **Paradox**—One aspect of the growth of commercial paper is somewhat paradoxical. Despite the rise in commercial paper outstanding, the number of companies using the device for financing their seasonal needs has been steadily shrinking.

Presently, only about 345 companies are selling commercial paper in the open market, compared with 362 in 1956, 650 in 1935, and 1,653 in 1929. But what is lost in numbers is more than made up in volume—particularly that of the finance companies.

The average amount borrowed by other borrowers is also on the rise. At the end of 1956, the average commercial paper issue of borrowers—ex-

RESISTS CORROSION



Reynolds Aluminum Process Pipe ...costs less to buy, install, maintain

Reynolds Aluminum Process Pipe is the answer to one of the biggest problems in the processing industry: corrosion. This is fairly well understood. But what isn't so well known is the fact that aluminum is a cost-cutter, as well.

It costs less to buy. It costs less to install because it's lighter, easier to handle and join. And, of course, it lasts longer because it resists corrosion.

Aluminum can handle such corrosive fluids as hydrogen peroxide, nitrogen solutions, many acids, alcohols, foods, sweet and sour crudes, raw or refined gases, kerosene, naphthas, gasoline. It can handle them far better than other materials of anywhere near comparable cost.

Aluminum is non-sparking—safer where flammables are handled. And of course, it won't rust, so maintenance costs are lower.

Reynolds Aluminum Process Pipe is just one example of how aluminum, and Reynolds engineering, can improve products and production, and cut costs for industry. For information on any application of aluminum, call the Reynolds branch office near you or write: *Reynolds Metals Company, P. O. Box 1800-GA, Louisville 1, Kentucky.*

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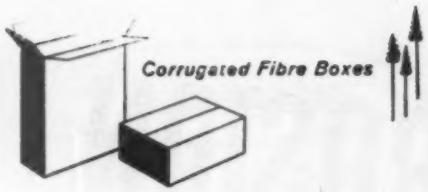
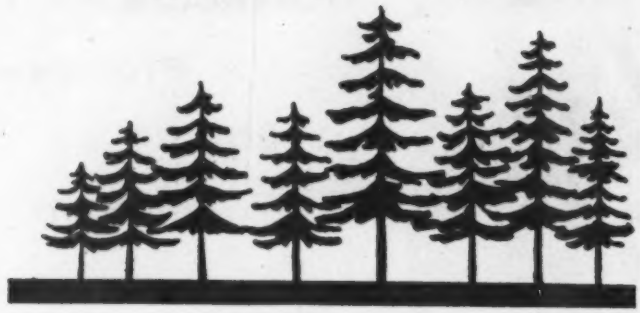
Another way
REYNOLDS ALUMINUM
helps cut costs, improve products.



FORT WAYNE
FARMS THE FORESTS



And shippers reap the harvest—the superior quality and performance they get from Fort Wayne corrugated shipping containers.

Through scientific cutting, seedling development, modern reforestation—tree farming at its best—we maintain an ever-replenished source of raw materials. We establish right in the forest a rigid quality control that continues through every step in Fort Wayne's completely integrated production.

That's why we can be so emphatic about Fort Wayne container quality. We *control* it.

A copy of the company's latest financial report may be obtained by writing to Harold M. Treen, President, Fort Wayne Corrugated Paper Company, Fort Wayne 1, Indiana.

Fort Wayne
CORRUGATED PAPER COMPANY
GENERAL OFFICES • FORT WAYNE 1, INDIANA

49th YEAR

". . . smaller concerns are not sufficiently well known for their paper to be widely acceptable . . ."

STORY starts on p. 64

cluding the five major finance companies—stood at $1.4-million, compared with only $669,000 in 1947. Part of the increase, undoubtedly, was due to the rise in corporate operating costs over the years, combined with the shrinking purchasing value of the dollar.

Recently, the average has shaded off, but the decline is accounted for by increasingly stiff credit standards demanded by investors as money tightens. And bank buyers of commercial paper have been faced by increasing demand from their own customers. Banks today are estimated to hold only about 40% of the outstanding paper, compared with as much as 90% to 95% up through the early 1940s.

• **Exclusive Club**—The commercial paper market normally has little room for borrowers who are not top-notch credit risks. It is characterized by extraordinarily stringent credit standards. Thanks to the field's excellent loss record over the years (there hasn't been a commercial paper default since 1937) commercial paper is considered almost on a par with Treasury bills as far as safety and liquidity goes, and both compete in the open market for lenders' funds. In fact, a major factor in the rise and fall of paper rates is the Treasury's bill rate.

Use of commercial paper is limited, for the most part, to the top companies in an industry or trade, and to companies capitalized at $250,000 to $10-million or more. Smaller concerns are not sufficiently well known for their paper to be widely acceptable.

The wave of mergers in recent years has diminished the number of eligible companies, and the tightening money market has made lenders even more selective, pushing some companies right out of the market.

• **Why It Grows**—One major reason for the recent increase in use of commercial paper has been the growth of financing needs during the past 10 years. As the economy has expanded at breakneck pace, many companies have found themselves up against a blank wall at their banks. The barrier is built of several good-sized blocks:

• For a number of large corporations, especially the big finance companies, expansion of bank credit means opening lines at literally scores of banks. The legal loan limit prohibits a national bank, for instance, from handing out to a single borrower an amount exceeding 10% of its total capital and surplus. One large borrower recently

The best in service... yours for the asking

Let this expert be your "Insurance Department"

Most large firms buy their insurance on a carefully planned basis. Some have special departments to handle details.

Small firms are different. All too often, they have no "Insurance Department," no plan.

A big fire . . . an unforeseen accident . . . an embezzlement . . . a payroll theft . . . a huge damage suit . . . any one of these could set a firm back for years. Or put it out of business.

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He provides the best in quality insurance and professional service for his clients, *large or small, with or without insurance departments of their own.* So be sure to get his help and advice. And count on us to give him all the assistance he needs when he places your insurance with the Hartford Fire Insurance Company Group.

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KING CANUTE PROVED:

"Hollering won't turn the tide!"

This wily old king of Norway, Denmark and England was nobody's fool. He knew that flattery would get you absolutely nowhere. And he proved it to his courtiers, by demonstrating how much attention the waves paid to his commands to subside.

It's much the same in business. All the talk in the world won't bolster shrinking profit margins. It is action which pays off in the end.

If your cost and profit picture warrants "action", may we suggest a course for you to take?

Magnaflux Nondestructive Test Systems are a new production tool being adopted by many. These methods economically find cracks, porosity, measure thickness, sort metals, etc., *in production*. By using one or more of these methods at various stages of "in-process" operations you can reduce avoidable waste in your daily production. Defects can cost *extra*. Detecting the cause and eliminating it early reduces your reject rates, minimizes the need for re-work, and saves wasted man hours and machine time.

If these factors may affect your profits, write for a copy of our new booklet, "LOWER MANUFACTURING COSTS", which explains how Magnaflux Test Methods have helped others. Or, if you prefer, get the complete story firsthand by arranging for an interview with one of our capable Magnaflux Field Engineers.

Moral: Don't ask manufacturing tides to turn. Move with them, controlling with Magnaflux Test Systems.

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To Test is to Economize

MAGNAFLUX CORPORATION

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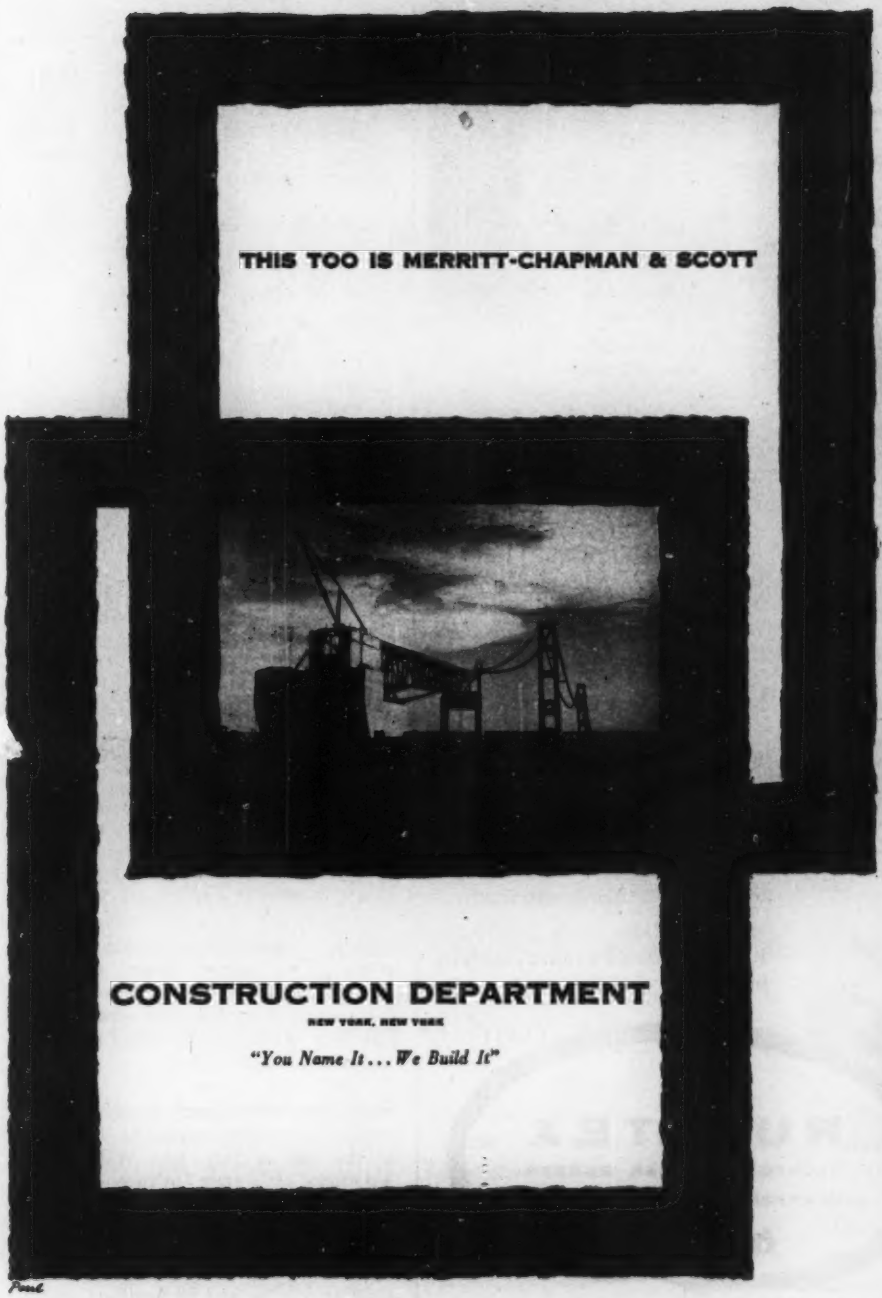
had lines of credit totaling $580-million at 582 banks. If this company wanted to extend its credit to meet its need for short-term capital, it would have to add a considerable number of smaller banks to its string. This can be mighty costly in terms of paper work alone.

• It's getting tougher and tougher to get loans from the banks. For one thing, banks frown on borrowers who remain in debt to them over extended periods. The commercial paper market offers such companies an alternate source of funds, and an opportunity to refund longstanding bank credit. This shuttling back and forth improves their credit position with the banks, as well as with the commercial paper market itself.

• The cost of bank loans gets higher and higher—and commercial paper rates are generally lower than bank rates. Although the prime rate on bank loans is 4½% few borrowers qualify for it currently. What's more, the effective rate is higher because most banks insist that borrowers keep about 20% of their loan on deposit. The commercial paper rate traditionally runs about ½% to 1% below the rate charged for large business loans by the major commercial banks. Campbell Soup Co., for example, for the first time in many years recently started selling commercial paper to pay for the incoming tomato crop. The explanation, according to a top company official: "Just a straight question of cost. We find we can secure the money this way on a more favorable basis."

• **New Buyers**—In the last few years, a number of corporations, temporarily flush with cash, have come into the market as important buyers of commercial paper. Just a few months ago, for example, International Business Machines sold some $230-million of new capital stock, and for the first time bought commercial paper as a short-term investment. Up to then, it had relatively small amounts of cash to invest on a short-term basis, and what it had, it put exclusively into Government securities. Its entry into the commercial paper market now, says IBM, was partly due to a desire to diversify the relatively large short-term investment now required.

A number of corporations have long prohibited their treasurers from investing in commercial paper. Boards of directors in some cases still stick to the old view that Treasury bills are wiser investments, although they bring in a lower return. This view is changing, however, as pressure builds to increase corporate profits. Company managements, desirous of putting every loose dollar to work at the best "wage" possible, are dropping prejudice in the face of expendiency. END



Construction of Every Type:
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Industrial Plants, Bridges, Tunnels, Steel Mills, Housing Developments, Paper Mills, Highways, Chemical Plants, Piers, Bulkheads, Commercial Buildings, Hospitals, Schools, Utilities, Airfields & Air Base Facilities, Pipelines, Dry Docks, Shipways, Sewage Works, Dams, Hydroelectric Plants, Marine Oil Terminals, Bulk Fuel Storage Facilities, Hotels, Dredging

Marine Salvage

Derrick Heavy Hoist

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Techniques and skills gained on every conceivable type of construction here and abroad give Merritt-Chapman & Scott a broad background of specialized versatility . . . an added plus on any job. Case in point: these pulp and paper mills, New Zealand's first newsprint project.

Extensive work for the Nation's accelerated highway program is one of Merritt's many roles in advancing our economic frontiers. This section of the New Jersey Turnpike is typical of six major road building projects recently entrusted to M-C & S.

Merritt's diverse skills are playing an important part in the construction of the vital St. Lawrence Seaway and Power development. Seven projects, including this closure dike and lock at Cornwall, Ontario, have already been awarded to M-C & S.

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RUBATEX ACCEPTED AS CLARK CONTROLLER'S "UNIVERSAL" GASKET

Prior to 1950 The Clark Controller Company used natural rubber, felt and neoprene gaskets depending upon the conditions under which the equipment was used. After extensive tests, Rubatex Closed Cellular Rubber was found by them to meet every condition and specification required by both their own engineering department and NEMA enclosure specifications.

"In looking for a single gasketing material which would be suitable for use on various types of industrial control enclosures, several types were investigated and tested. Rubatex R-219-N was found to have the desirable characteristics necessary to withstand the conditions under which industrial control is applied."

Roland Russo, Manager, General Engineering Standards Department, The Clark Controller Company, Cleveland, Ohio.

Gordon R. Fish, Foreman, Cabinet Department, inspects Rubatex on cabinet. Unique closed cellular structure of Rubatex makes non-ventilated enclosures air and watertight as well as weather resistant for wide variety of Clark's electric control apparatus.

The particular problem overcome by Rubatex strip stock at Clark Controller is one of efficient sealing against leakage of any sort. For example—if a control is situated in an extremely dusty atmosphere, the dust surrounding the cabinet must be kept out of the control enclosure and away from the electrical arcs and mechanical parts therein.

Rubatex R-219-N Closed Cellular Rubber meets these requirements and in addition reduces gasket costs while increasing manufacturing efficiency.

Why not check to see how Rubatex can do a more efficient job at less cost for you?

Rubatex requires only one bonding cement and only one single easy method of application. Rubatex gaskets form a leakproof seal against oil, water or dust.

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CLOSED CELLULAR RUBBER
LEAKPROOF GASKETS

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For full details and sample of the new Rubatex Closed Cellular Rubber Leakproof Gaskets—print your name in space below, attach to your company letterhead and mail to us.

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FINANCE BRIEFS

Life insurance company assets rose $2.4-billion in the first half-year to a record-breaking $98.3-billion. According to the Institute of Life Insurance, the life group invested or reinvested more than $7.4-billion in the six months.

•

The first rate boost in 28 years, granted by the New York Public Service Commission to Niagara Mohawk Power Corp., is expected to raise revenues about $8¼-million a year.

•

Mutual savings bank deposits increased in the 1957 first-half at the slowest pace in five years. Indeed, the National Assn. of Mutual Savings Banks attributes virtually all the gain—$876-million compared with $1-billion in first-half 1956—to the interest-dividends credited to depositors. At midyear, deposits amounted to about $30.9-billion—twice as much as in 1945 and 50% more than yearend 1950.

•

Outsiders will have a chance to buy into Hudson's Bay Oil & Gas Co., now owned 75% by Continental Oil Co. and 25% by Canada's ancient Hudson's Bay Co. But only 1,745,000 new shares have been registered for public offering, compared with 16-million already outstanding.

•

Federal, state, and local taxes in the fiscal year ended June 30 added up to $121-billion, the Census Bureau reports. That was 12% more than in the previous year.

•

Allstate Insurance Co., fast-growing insurance subsidiary of Sears, Roebuck & Co. (BW—Mar.16'57,p142), started last week selling commercial fire and contents insurance in Michigan at rates 15% below those generally charged. Allstate has sold residential fire insurance in the state since 1955, but this is its first venture into the commercial field there.

•

State investment funds in New Jersey held $721-million worth of securities at the end of July, says William V. Voorhees, Jr., state finance director. During July, funds acquired $43.1-million worth, including $27.6-million of Treasury obligations yielding 2.89%; $12.2-million government agency issues yielding 3.92%, and $9.4-million utility bonds averaging 4.64% yield.

•

Fire losses still climb. According to the National Board of Fire Underwriters, they totaled $77.8-million in July—11% more than in June, 13.2% more than in July, 1956. The six-month total of $628-million was 7.1% above the year-earlier level.

They laughed when she sat down to type...

. . . but not for long! For soon typewriters, and their female operators, became welcome symbols of office efficiency.

Business machines of all kinds followed the typewriter, to completely revolutionize office methods. Today, modern electronic data-processing "brains" vastly expand the scope and capacity of human skills in scores of jobs all over America.

Ferro alloys produced by Vanadium Corporation of America are essential to the manufacture of stainless and alloy steels which continue to contribute so much to the development of modern business machines.

These special enduring steels figure importantly in thousands of other modern products outside the office, too—in airplanes, appliances, bridges, autos, buildings—almost everywhere you look!

Vanadium Corporation is one of America's leading producers of ferro alloys, metals, chemical compounds, and uranium for atomic energy. *Whoever you are, wherever you are, these products serve you.*

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Metallurgy offers great career opportunities. Get facts from your vocational guidance counselor.

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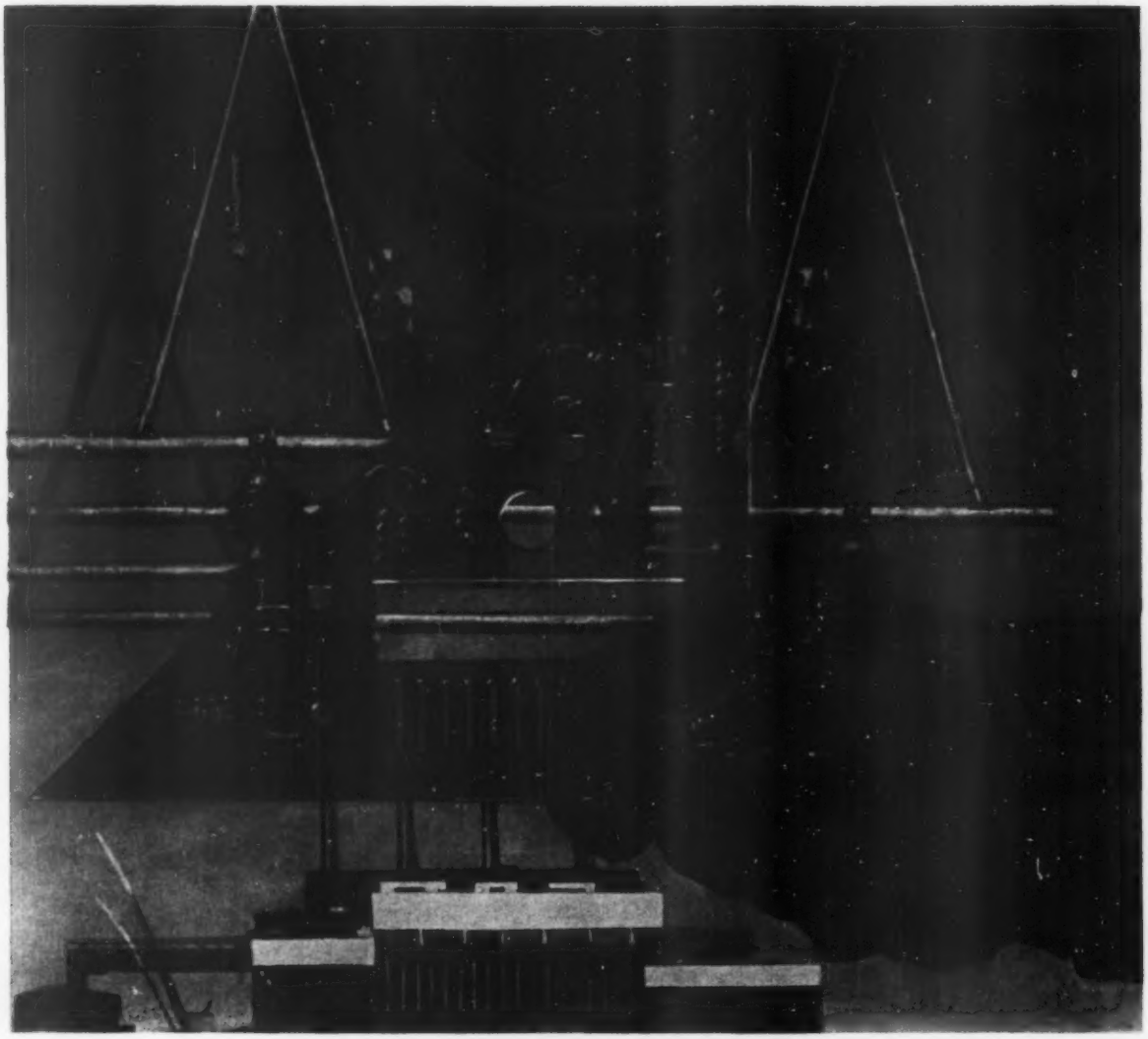
RESEARCH CENTER—Cambridge, Ohio • MINES—South America, Southern and Northern Rhodesia, Canada, U.S.A.



Here the brush of Stanley Meltzoff graphically depicts the alpha and omega of another great power project—the intricate installation nearing completion, the gloved hand of a skilled craftsman grasping the template used by the engineer and draftsman in translating the design.

United Engineers has pioneered in the design and construction of power plants across the nation. As designers, construction engineers, and engineering consultants, we have long served many of the pace-setting utilities and industrial organizations on such projects as thermal and hydroelectric plants, electric substations, and installations for supplying heating and process steam. Each presented its own particular problem—successfully solved on schedule and within the estimate.

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It's Cost-Shearing Season Again

This year's pinch on profit margins spurs a cost-cutting drive, not quite so sweeping as in 1949 or 1954, but already bringing hefty savings for many companies; and some are setting up machinery to keep the shears in permanent working order.

PLENTY of U. S. executives today are emulating the man in the cartoon above, and are wielding the sharpest pair of shears they can find in a stern effort to cut their current costs of business. The reason, of course, is that in many cases, in spite of rising sales, they see profit margins narrowing (BW–Aug.4'57,p23).

Increased labor and material costs have put a squeeze on profits, and often sharpened competition prevents a price boost, leaving cost-slicing as the only way out. It's true that so far many companies are doing more talking than heavy cost trimming, but BUSINESS WEEK reporters, in talks with executives throughout the country, found many others already hard at it.

If third-quarter statements should show any sort of dip–or even if they show no improvement, a lot more companies will be taking to the shears.

• **Cycle**–It's a familiar cycle–or, as one executive put it, "Here we go again." When things are going well, everybody is too busy making money to worry about extra expenses and minor costs. But if profits dip for a bit, the tightening up starts and the cost-cutting programs multiply.

"This cost campaign isn't as rigid as the one in 1954," says a Pittsburgh veteran, and the previous one in 1949, topped that."

Usually, a company's program starts in the manufacturing operation, where direct costs can be attacked–but soon sweeps through the company to tear at overhead in any form–phone bills, expense accounts, unnecessary jobs, and paperwork. Plans for combining operations, which until now the company has been too busy to attempt, are dusted off–and sometimes implemented. Then, when the profit pressure begins to ease, costs start imperceptibly to bulge again.

Since cost cutting by definition involves cuts in current operations, it's almost inevitable that it should come in spurts and that success should be short-lived. For a company's current operations change from year to year with shifts in its business, and new cost factors develop with changing products and changing business conditions.

At any rate few companies have been able to keep their cost-cutting machinery working continuously in high gear –though some try hard. So the new wave of cost cutting that's starting up bears some strong resemblances to its predecessors. But BUSINESS WEEK reporters, visiting executives in all parts of the country, found new factors at work, too.

I. What They Are Chopping

They found that, so far at least, few companies are wielding the ax on research, or sales. Almost without exception, in fact, companies with research programs are putting more money into them, not less. As one company head explains, "That's where our products for tomorrow are going to come from."

Sales expenses, by and large, are also unscathed up to now. The salesmen are "the boys that bring in the money," in one executive's words.

There's hardly another field, though, that's exempt from the eager search for savings–a search that frequently, though not always, breaks new ground.

• **Process Changes**–New processes, and product changes that save pennies and dollars, are getting fresh emphasis (as are special training courses).

• Virginia Metal Products Co., of Richmond, Va., cut $90,000 off its $400,000 yearly paint bill by switching from its regular equipment to a newly

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developed du Pont steam spray for its portable office panels.

• Diamond T Motor Car Co. set up a special manufacturing research group that reviewed production methods and came up with 850 product changes (mostly minor) that have saved an estimated $100,000 in yearly production costs. In truck radiator supports, a switch from a combination of steel tubing and plate to a single casting saved $13,600, brought the unit price down from $1.35 to 22¼¢. Redesign of a $1.68 panel brace yielded a better product for 70¢, saved $3,000 a year, and a multitude of other minor penny saving changes ran the total on up from there.

• **Getting It Across**—In order to get cost consciousness down to the grass roots level, and dig out new ideas for saving, some companies use poster and propaganda campaigns. A few go beyond that to courses in production methods for foremen.

American Machine & Foundry Co. ran a work simplification program for foremen in six plants, says it saved $215,000 in production costs per year and is now extending the program to eight more plants. The project brought out 5,000 suggested improvements that management found acceptable. Johns-Manville Corp. says a big slice of a $5-million annual saving in production costs can be attributed to its "work smart" program for plant production crews.

• **Invading the Office**—After a bit of this sort of thing, though, companies run out of easy or dramatic means of slicing plant costs, and move into the more intangible field of overhead or office costs.

The signal for this invasion of the office is usually a set of little notes to employees to watch their phone calls. One Pittsburgh company now lists on the bulletin board any long distance call —including the president's—lasting more than 10 minutes. Weatherford Oil Tool Co., Houston, says it cut its monthly phone bill nearly in half by an inter-office Teletype system, and a number of other concerns have found that less-

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PHOTOGRAPH BY KAREN OF OTTAWA

Bill Wetzel: a pickle inspector who substitutes brain for brine

• Bill Wetzel's kind of pickling has nothing to do with preserved pickles. To Bill and his colleagues, pickling is the chemical process by which scale and oxides are removed from steel. Bill's 17 years' experience qualifies him as an expert — one of a team of craftsmen that has convinced manufacturers they can expect the finest in quality steels when they specify Sharon.

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Whatever *your* business, Teletype equipment can be tailored to solve many problems. To learn more about Teletype's versatility, contact your local telephone or telegraph company. And write for our informative booklet, "The ABC's of Teletype Equipment." Teletype Corporation, Dept. BW9, 4100 Fullerton Avenue, Chicago 39, Illinois.

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ing their own private telephone lines can be a money saver.

Other signs of overhead pruning reported by executives as already under way to save a dollar here and there are the combining of jobs, delays in hiring new people, trimming of advertising or public relations budgets. "This year I just don't have a budget," sighs the PR head of a diversified holding company that racked up a poor showing this year. One company that admits to cutting back on advertising and product promotion for a time is American Radiator & Standard Sanitary Corp.

• **Shortcuts**—Office management has also taken a leaf from the factory's work simplification book. The Dime Savings Bank of Brooklyn boasts that a work simplification program—taught by a New York University professor and consultant, and taking in everybody from top company officers down to supervisors—brought a hatful of money saving changes in work flow and organization.

New equipment brings many shortcuts. A Midwestern utility says it saved $10,000—equal to the salaries of three clerks—by using a duplicator to replace three typists. Fish Engineering Co. of Los Angeles set up its own print shop for its reports, cut at least $30,000 from a $100,000 annual bill. Commonwealth Edison Co. of Chicago expects its giant computer installation will save it $750,000 a year in clerical costs.

But big equipment can make costs jump, too, if it's not watched. Pathe Color, for example, overdid it a bit and rented a whole roomful of office machines for a total of $1,800 a month. A consultant advised it to take another look. It did—then bought two special adding machines for $2,400 total, paid for them in three months' savings and gets all the accounting and cost information it needs.

Other companies are having a fresh look at communications and paperwork—but here savings are harder to measure in dollars because they are nebulous. And, as one executive vice-president complains, "It's like hacking your way through a jungle for a month. Come back a year later and the undergrowth looks as thick as ever."

II. Keeping the Shears Sharp

That's the rub in all cost-cutting programs—keeping them going after the first enthusiasm wears off.

Continuous emphasis on cost cutting, one consultant in the field thinks, calls for two things:

• Some form of personal incentive (a bonus, or a sharing of the savings) in key spots where costs can be controlled.

• Almost daily distribution to these centers of comparative information on costs.

• **Small Company's Way**—Spreading

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How industry uses titanium's unique properties

The development and commercial production of titanium has been one of the great metallurgical achievements of recent years.

Right now, titanium is being used increasingly throughout industry, where its unique properties often add substantially to product performance. For example . . .

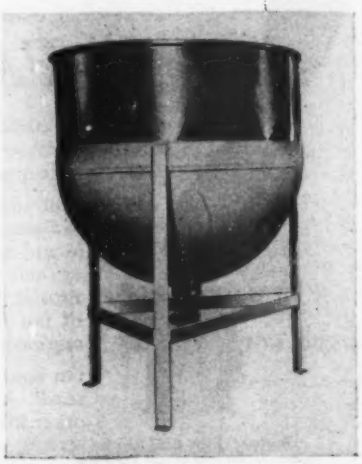
Titanium is strong as steel, yet 44% lighter. It outlasts other metals, even those generally considered "corrosion-resistant" by 10, 20, even 50 times or more. Moreover, it can be fabricated by ordinary shop methods.

Factors like these give titanium a low cost-life ratio; assure low operating costs per service year.

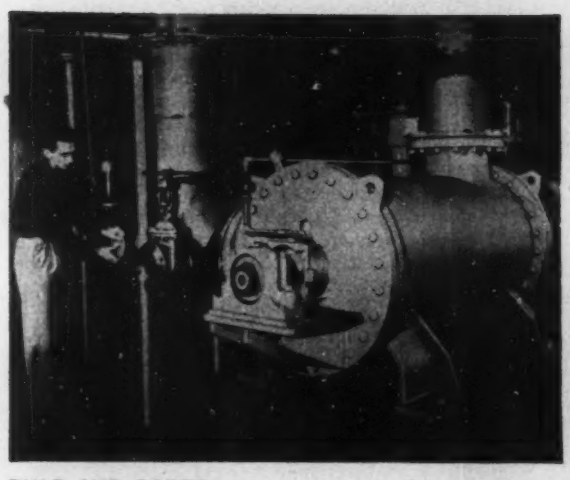
Shown below are a few representative applications in which titanium's light weight, resistance to corrosion, or long life have really paid off handsomely. Titanium may be just as much at home in your application, too. To find out, get in touch with your nearest Rem-Cru representative now.

AVIATION – A short five years ago, a great engineering adventure reached its climax with the first "flight-test" of titanium. Today, titanium is used extensively in both military and commercial aircraft because of its high strength-weight ratio, freedom from stress corrosion cracking and ability to withstand high operating stresses. Its use in structural members, fire walls, cowlings, bulkheads, skin sections, jet engine compressors and other key parts, saves hundreds of vital pounds. *Rem-Cru pioneered in the development and production of titanium alloys for aircraft applications.*

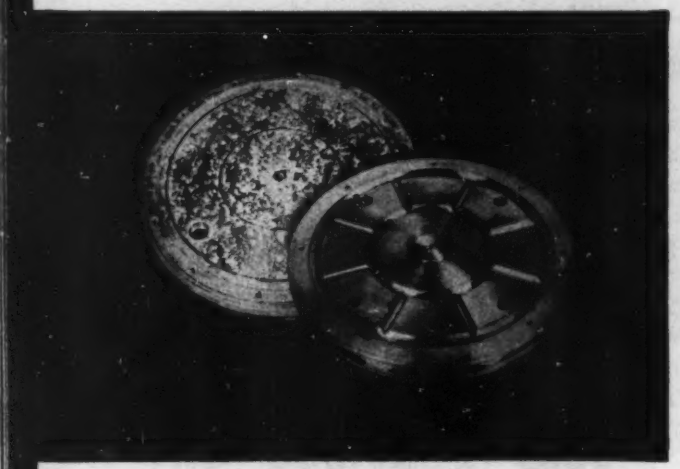
ELECTRONICS – One of titanium's properties is its ability to absorb unwanted gases left in vacuum tubes. By absorbing these gases, titanium makes possible more stable electron emission, and greatly lengthens tube life. Nearly all metal parts in this tiny General Electric Company micro-miniature receiving tube are made of titanium.



FOOD PROCESSING – Many foods are hard on metal processing equipment. High chloride contents of pickles, for example, have a corrosive effect on kettles and other utensils. Titanium, however, is unaffected by chlorides and most organic products; it is also impervious to brines which normally cause pitting. Equally important, titanium leaves foods strictly alone – never adds a "metal-taste."

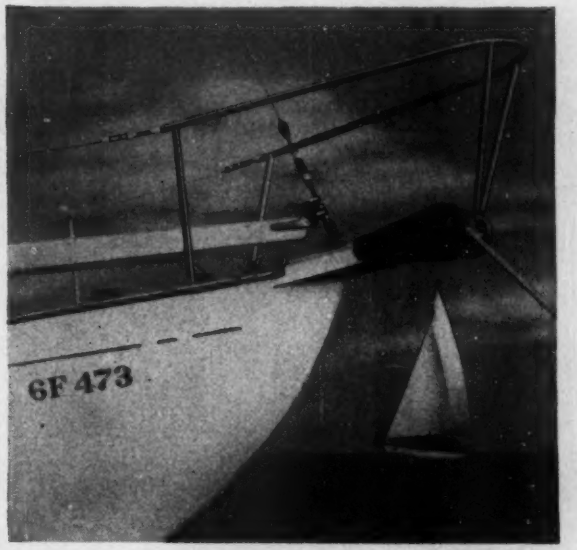


PULP AND PAPER – Chlorine dioxide bleach, widely used in paper making, improves whiteness and reduces fibre degradation, but it can ruin even special metal alloys in a surprisingly short time. Titanium is virtually immune to chlorine dioxide corrosion. That's why this new mixer, at Riegel Paper Corporation, has all contact surfaces made of Rem-Cru titanium.



CHEMICAL PROCESSING – There's a service life difference of over 1500% between these two parts, which are used in pressing solid cake from slurries of calcium hypochlorite at Pennsylvania Salt Manufacturing Co. Actually, the new-looking part is the "old" one. The part on the left, made of one of the best corrosion-resistant metals, lasted just two weeks. But the part on the right, made of Rem-Cru titanium, has been in use for over seven months, yet it shows no traces of pitting or corrosion.

Titanium proved its exceptional service life again at a DuPont chemical plant, where a condenser handling 60% nitric acid at 480 F and 300 psi corroded so rapidly it had to be replaced every five months. Unit costs and down-time were alarming. So, together, DuPont and Rem-Cru engineers developed a 12" diameter titanium insert that stopped corrosion at its source. The new condenser and insert have been in service now for 16 months *and still show no signs of corrosion.*



MARINE – Titanium won't pit, tarnish, discolor or corrode in salt water or sea air. It stays bright indefinitely without polishing or care. For example, the pulpit and stanchions of Rem-Cru titanium shown above, aboard the SEACALL, are as bright and clean today as when installed two seasons ago. Titanium has other advantages for the sailor, too. Its use in mast fittings means lighter weight aloft. And its exceptional corrosion resistance adds years to fuel tanks, sea water condensers, mufflers and exhaust pipes of wet or high temperature systems.

In each of these applications, titanium proved its ability to increase performance or cut replacement and production costs—major reasons why more and more manufacturers are turning to Rem-Cru titanium when they need a metal that is light, strong, corrosion resistant, and long lasting.

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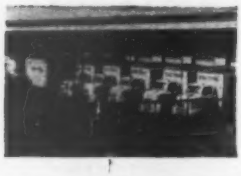

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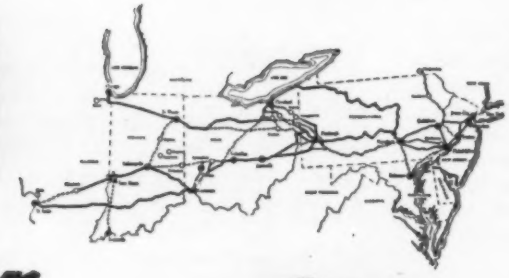

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up-to-date cost data where it counts may be easier for a small company. Transal Engineering Corp., producer of electronic equipment and radio gear (annual sales $2-million), found one way. With 10 separate assembly lines for different products, relatively long runs, and a simple assembly task, it jacked up its profit rate from 5% or less, to 12% by means of daily cost reports to the 10 foremen. Each foreman gets each day a statement telling him in dollars and cents whether his operation is in the red or black, if it was on schedule the previous day, and where he stands on his contract. The daily statements replaced month-end reports that usually came too late for action. By the time a foreman realized something was wrong the damage was already done.

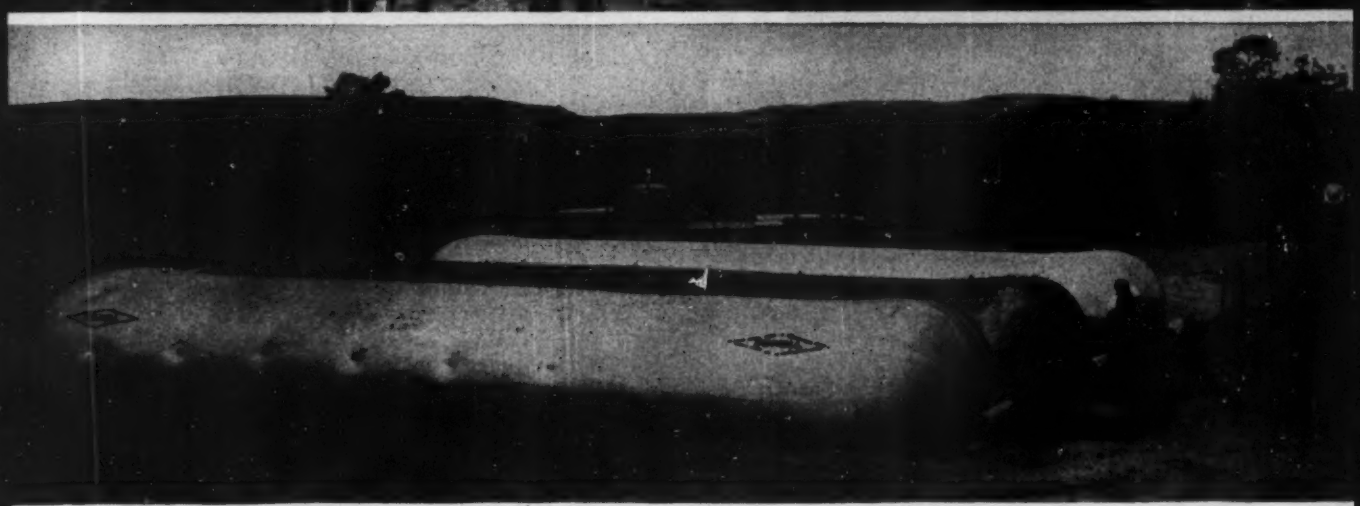
• **Targets**—In a larger company with a more complex production setup, this type of control is next to impossible (though computers for cost accounting do help). So some larger companies turn instead to standard costing and the targeting of specific savings goals for divisions and departments.

Westinghouse Electric Corp. divisions set up cost reduction programs for a year at a time, analyze what manufacturing improvements will be needed, and then are held accountable for reaching their goals. Of late, the company has been coming back strong in competitive fields.

• **Long-Term**—Johns-Manville says it has racked up savings of $5-million to $8-million a year by similar methods. Now, faced by shrinking opportunities for cost cuts in production, and a 28% drop in first-half 1957 profits compared to 1956, the company is setting up a special organization to keep the savings pot at a permanent boil.

Johns-Manville announced last month the establishment of a Special Administrative Service Dept., under a newly appointed vice-president, Henry N. Bates, and including a group of office methods men. It will coordinate attempts to cut paperwork, take the various tabulating departments under its wing, handle all office maintenance and allocation of space. V.-P. John P. Syme, who has just wound up a five-month cost study, is confident it will keep cost consciousness at a high pitch.

Already, a pilot study by J-M researchers of paperwork in a sales office, and a questionnaire from the president's office to all departments, has brought results in eliminating some reports, shortening others—saving tons of paper and hundreds of man-hours of paper shuffling. The new Administrative Services Dept. is now seeking to stem the paperwork flood on the interdepartmental and interdivisional level. Its ultimate aim is to lock the whole accounting and reporting system into one fast-paced unit—and keep it there. END



The "bed rolls" that become 15,000-gallon tanks

Oilfield costs are cut by these new tanks coated with neoprene—a Du Pont synthetic rubber

For years large portable steel tanks were used for storage on oil well stimulation treatments performed by Dowell Incorporated. But transportation, handling and maintenance of these steel tanks were costly and time-consuming.

Now Dowell offers its customers collapsible 15,000-gallon storage tanks made of nylon fabric coated on both sides with Du Pont neoprene. They cut costs and save vital time because 6 tanks can be carried rolled up like bed rolls on a small truck. Yet when filled with water or crude oil, they are 47 feet long, 10 feet, 8 inches wide and 5 feet, 3 inches high.

The tanks are lined with neoprene to resist oil, and covered with neoprene to resist deterioration by sunlight, abrasion and rough handling. Only neoprene has this balanced combination of properties.

This same combination of properties can help you cut costs of replacing rubber products you use or improve performance of products you make. The technical representative of your rubber goods supplier can show you the benefits of neoprene and Du Pont's new synthetic rubber, HYPALON*. To get the full story about both elastomers in a free booklet, just mail the coupon below.

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Proxy Fight Introduces a Sour Note Into the Hearts and Flowers Business

A proxy fight is under way for control of United Printers & Publishers, Inc., of Joliet, Ill., a major producer of greeting cards.

Insurgent shareholders, who claim 13% of the company's stock, say they want to increase the company's board of directors from seven to 15. They also hope to jack up sagging profits and put a stop to an allegedly imminent deal whereby United will acquire foreign greeting card companies from one of its directors. **The rebels claim that present directors own less than 106 of United's 520,000 outstanding shares and are responsible for poor profits.**

During fiscal 1957, United earned $398,137 on sales of $19.3-million, while during 1947—its best year—it earned $1.7-million on sales of $14-million. However, Pres. W. Christopher notified shareholders that profits are on the rise. Earnings for the first five months of calendar 1957 were $137,041, compared with $134,253 for the similar period in 1956. Christopher's letter asking for stockholder support came on the same day as the insurgent's announcement that they were launching a proxy fight.

• • •

Authors Accept Businessmen's Challenge To Prove They're a Race of "Cash McCalls"

American businessmen, weary of blushing over their portrayal in current fiction, will challenge their critics at an American Management Assn. conference in New York, Sept. 23-25. The meeting is slated to draw 1,500 personnel and labor relations executives.

A special session will begin with a summary of recent novels dealing with businessmen—including Cash McCall, Executive Suite, The Man in the Gray Flannel Suit, and Sincerely, Willis Wade. Then a panel of critics, made up of a company president, a professor, an industrial relations executive, and an editor, will confront the author of a current best seller. The author will defend the creative artist's point of view.

• • •

Philosophers Descend From Ivory Tower To Lend Industry a "Practical Hand"

Industry, which pays for about every conceivable kind of service, is even hiring professional philosophers. More and more ivory towerites are accepting employment in government and industry, according to Dr. R. S. Rudner, assistant professor of philosophy at Michigan State University.

Like many specialists, philosophers feel their greatest value lies in adroitly guiding the hand that sets company policy. One of the major problems in industry and government is making policy decisions, and here is where the philosopher in the special field of ethics steps forward. He is able to identify goals and values, and can help assess the available means for attaining them, Rudner says. But failing the development of "philosopher presidents," the wise men will settle for more mundane roles.

In the insurance field, philosophers are screening complex policies to be sure the company doesn't end up contradicting itself. Manufacturers of electronic computers have hired them as logicians in computer design and programing. And career philosophers are finding themselves in growing demand, concludes Rudner.

• • •

The Front Office Is Doing All Right: About 50% Got a Salary Hike Last Year

Top executives fared well salary-wise last year. On the average, company presidents took home 5% more pay than they did the year before, and that was only a little less than the 6.3% raise they accepted during the boom year of 1955.

Actually, only about 50% got a raise. **Almost a quarter of the group took a cut, and the rest stayed the same,** according to McKinsey & Co.'s annual survey of 641 companies in 18 industrial groups.

The top increases, say the consulting company, came in nonferrous metals, petroleum, public utility, and steel industries. Nonferrous executives led, with a 9.1% gain, with steel's 9% close behind. Automobile parts, retail chains, textiles, and tobacco took a cut—which the hard-pressed textile industry led with an average 6% drop in pay for top men.

• • •

Management Briefs

There were contradictions galore last week in the Securities & Exchange Commission hearings on Bellanca Corp., holding company that faces possible delistment from the American Stock Exchange (BW—Aug.3'57, p139). The testimony of Sydney Albert, principal witness in the proceedings, failed to make clear before adjournment exactly what went on in the complicated three-way money deals in which the company was involved.

In another action, the SEC vetoed a proposal by **Carpenter Steel Co.** to take control of **Northeastern Steel Corp.** in a reorganization, on the ground that the deal didn't offer "fair compensation."

Another merger? National Gypsum Co. is looking into the possibility of acquiring **American Encaustic Tiling Co., Inc.,** through an exchange of stock. The tiling concern, with sales of more than $10-million a year, is running counter to the trend in its industry by bettering last year's earnings.

Project: Growth

JOHN I SNYDER, JR., President and Chairman of the Board of Directors

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USI's nine-year progress report: In 1948, one product – today, hundreds. In 1948, one market – today, dozens. In 1948, $58 million in annual sales – today, almost $125 million. In 1948, working capital of $7.5 million – today, $30 million. In 1948, a loss of $2 million – today, an income after taxes in excess of $5 million.

Behind this achievement lies USI's Board, with extensive experience in transportation, chemicals, finance, precision tool manufacturing, research and government planning. To date the Board has piloted USI into making aircraft landing gears, engine lathes, petroleum pumping equipment, giant metal forming presses, welded steel pipe for water, oil and gas transmission, dairy equipment, cookware, electrical fittings, steel tanks, and components and systems for jet aircraft and guided missiles. And "project growth" is barely under way!

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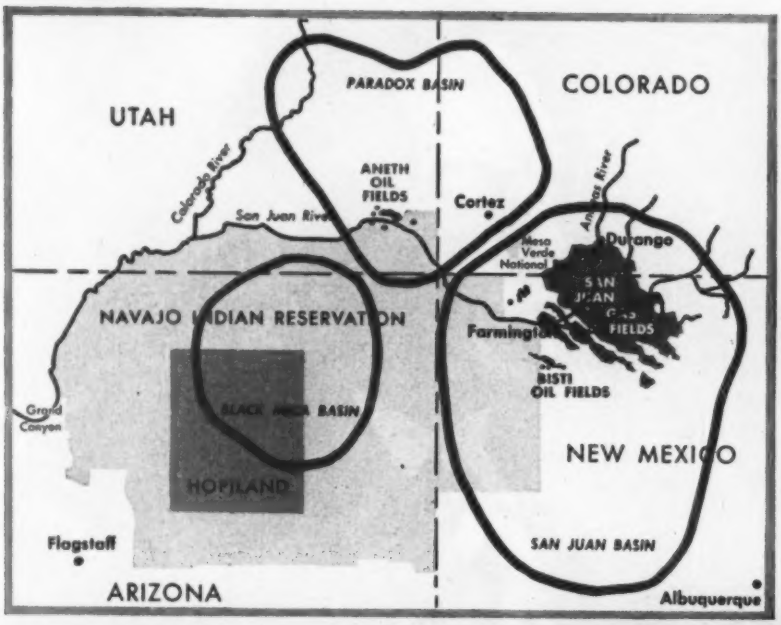
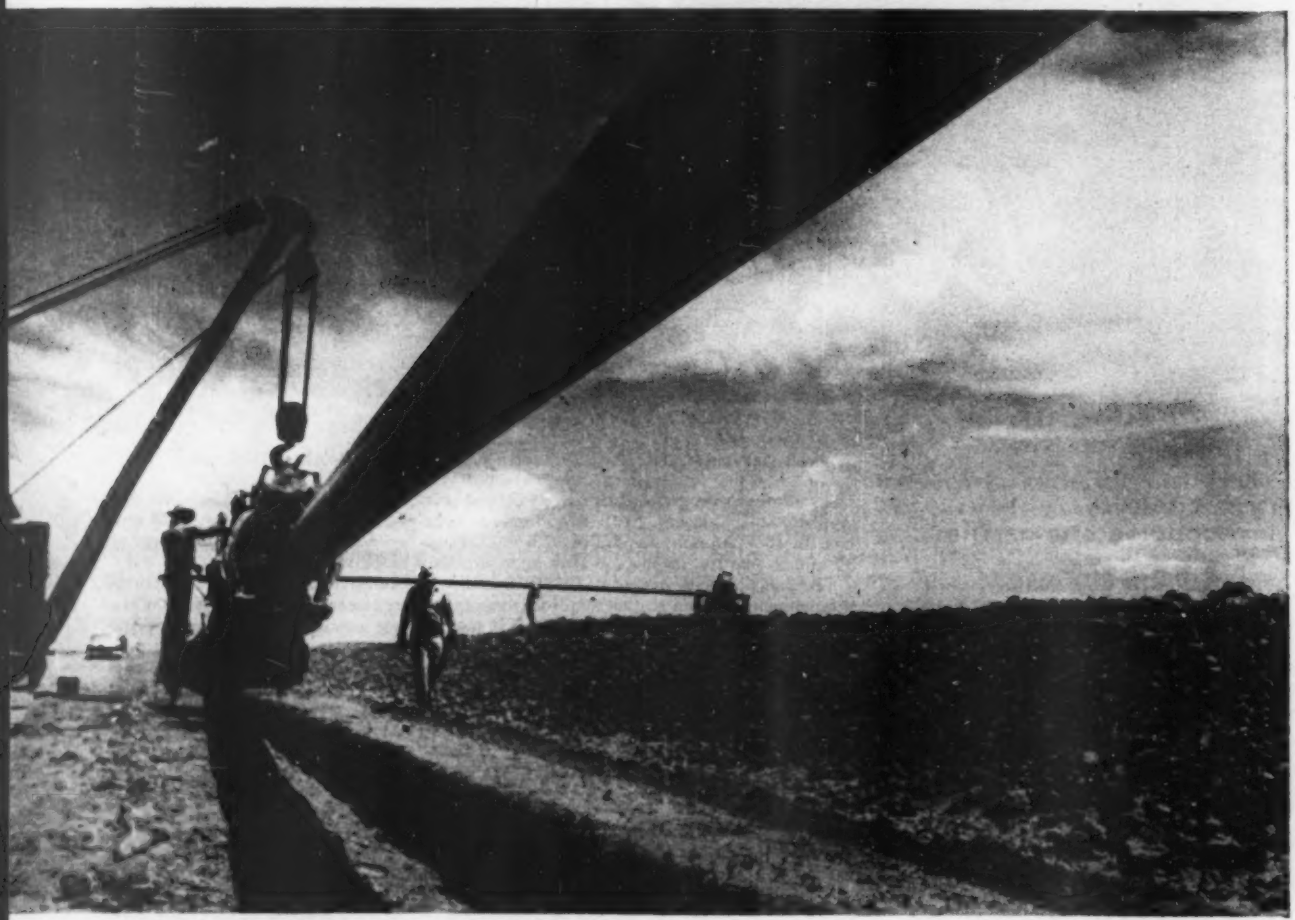


Billion-

Four Corners region of the Southwest is having its oil and gas boom—but far different from previous ones.

A SMALL white monument on the southern bank of the San Juan River marks the only point in the U.S. where four states meet: Utah, Colorado, Arizona, and New Mexico. This is the Four Corners. And an unlikelier site for a billion-dollar boom would be hard to find.

Swing a 150-mi. radius around the Four Corners (map), and you'll encompass the sheep and goat ranges of the Navajo Indians, a scattering of villages and incipient cities, the tapered end of the Rocky Mountains ("more country



FOUR CORNERS PIPELINES play crucial role in the boom. This one is being fed through coating and priming machine as it is lowered into trench across Arizona. Pipeline is to be built out to West Coast.

Dollar Boom in the Desert

standing on edge than anywhere else beneath the sun," said the early settlers), and millions of acres of sunbaked sand and sagebrush—land that the first settlers described as "worthless except to hold the world together." This land the white man gladly left to the Indians.

But within this same 150-mi. radius, oil companies have invested more than $1-billion in the past eight years (cover). They have found oil and gas in such quantities that the industry speaks of Four Corners as "one of the greatest discoveries of the century."

• **Controlled Boom**—The subsurface blessings of the bleak Four Corners area are matched by another stroke of geographical and economic luck: The oil and gas are near enough to the big California market to be worth developing in spite of the obstacles of water

OLD WEST lives on in Diamond Belle Saloon of the Strater Hotel in Durango, Colo. Scenic Durango has been the location for at least 25 Western movies.

OILMEN with mobile rig get ready to "shoot" a well to check rock structure.

NAVAJO tribal council includes one woman, Annie Wauneka (picture, left).

NEW WEST, Farmington's main street, is typified by cars, neon lights.

TOM BOLACK, one of the few local independents who made millions on the Four Corners boom, stands (below) looking toward a distant mesa across oil-filled wastelands.

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"it's the economical way to grow!"
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Story starts on page 88

scarcity and difficulty of transportation.

California doesn't produce anywhere near enough oil for the needs of its fast-growing population, and its deficit has had to be made up by oil tanked in from Canada, South America, and the East Indies. Now El Paso Natural Gas Co. has a gas pipeline to California, and two oil pipelines are under construction by major companies—one to California, the other toward the Gulf Coast.

Thus, Four Corners is fortunate in having ready markets for its new wealth, and the backing of big companies to develop its fields. That's why it is enjoying a boom—oilmen prefer to call it "orderly development," because the boom is so closely controlled—that it could overshadow the other big postwar oil finds: Spraberry in West Texas, Williston Basin in Montana and North Dakota, and northern Alberta in Canada.

• **The Differences**—Four Corners contains three big geological basins (map):

• San Juan, in southwestern Colorado and northwestern New Mexico, mostly gas wells but one promising oil field, Bisti.

• Paradox, in southeastern Utah, currently getting the hottest play from oil well drillers.

• Black Mesa, in Arizona, still a big question mark in the disputed Hopi Indian land surrounded by the Navajo reservation. The Hopis block exploration for oil and gas.

In this area—whatever its oil riches—there will never be an old-fashioned, gun-slinging, gusher-type boom like those of pre-Depression days in Oklahoma and South and East Texas. Derricks will never stand two to the acre as in the Spindletop booms of 1901 and 1927. For one thing, oil conservation laws, adopted since 1931 in all major oil-producing states, don't allow the waste and close spacing of the old days. For another, this is a boom for big landowners, big oil companies—not for small wildcatters. Leased land in Four Corners is 90% owned by federal and state governments and the Indians.

None of the other postwar booms was quite like Four Corners. Spraberry is closer to markets and supply lines, but the oil underground is hard to recover and the land is held in many different names. Williston Basin is like Four Corners in having few landowners to deal with, chiefly the Northern Pacific RR. But it is even more remote from markets. Its wells have proved to be costlier, too, going down 7,000 to 8,000 ft., compared with 5,000 to 5,500 ft. for the Bisti Field in Four Corners. Alberta is still more remote from everything.

• **Pipelines Lead the Way**—Four Cor-

BUSTLE in Farmington after dark centers around Avalon Cafe, rendezvous of oilfield roughnecks and Indians. Indians are allowed to drink while off reservations.

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URANIUM MINING plays second fiddle to oil and gas but is still big industry.

ners would be little without the ready markets, particularly California. So the pipelines are really setting the pace and determining the place for the oil and gas development, instead of merely going where the wells already are. This is one factor that puts the Four Corners boom largely into the hands of the big oil companies.

Another factor is the cost of finding oil. In the San Juan Basin, it costs around $45,000 to drill a dry hole, another $25,000 to complete a producing well; in the Aneth Field of the Paradox Basin, a dry hole comes to around $100,000, and it takes another $30,000 to complete a producer.

In the old days, an individual could speculate with a relatively small amount of money to drill on a tiny piece of practically proven land. Today, you have to gamble far larger sums, at far stiffer odds, and few but the big companies can afford it. These companies are looking not for a fast buck today but for long-term reserves that will pay off over 15 or 20 years. That's why the Four Corners development is so "orderly."

I. One to Grow On

The local effect of Four Corners oil and gas activity can be seen on the Navajo reservation and in the three small cities: Farmington, N. M., and Durango and Cortez, Colo. (pictures). Nowhere, however, will you see the old-style boom.

This time, there aren't many suddenly rich Indians to buy a Cadillac for each day of the week. Only a few small tribes, such as the Utes, divide up their lease money among the individual tribesmen. The Navajos, who have alone received $38-million from oil leases in the past 18 months, are spending their oil money for the general welfare: scholarships and tuition, new "kivas" (meeting houses), water development, experimental farming, and new industries.

The tribal council, under Chief Paul Jones (BW—Jul.28'56,p132), feels the money goes further this way. And there's more money coming soon. This fall, the Navajos are putting another 350,000 acres up for bid. So far, they have leased about 1.8-million of their 16-million acres. Besides these bonuses for leases, the Indians are assured of another $1.25 per acre annual rental, plus the usual one-eighth of all oil and gas produced.

The cities, too, look different from the old boom towns. This time, there are chromium-trimmed trailers instead of tents, paved streets instead of rutted mud roads, supermarkets and shopping centers instead of trading posts and general stores.

• **Tale of Two Cities**—Farmington and Durango stand in sharp contrast in their reaction—as the area's two leading cities—to the Four Corners boom.

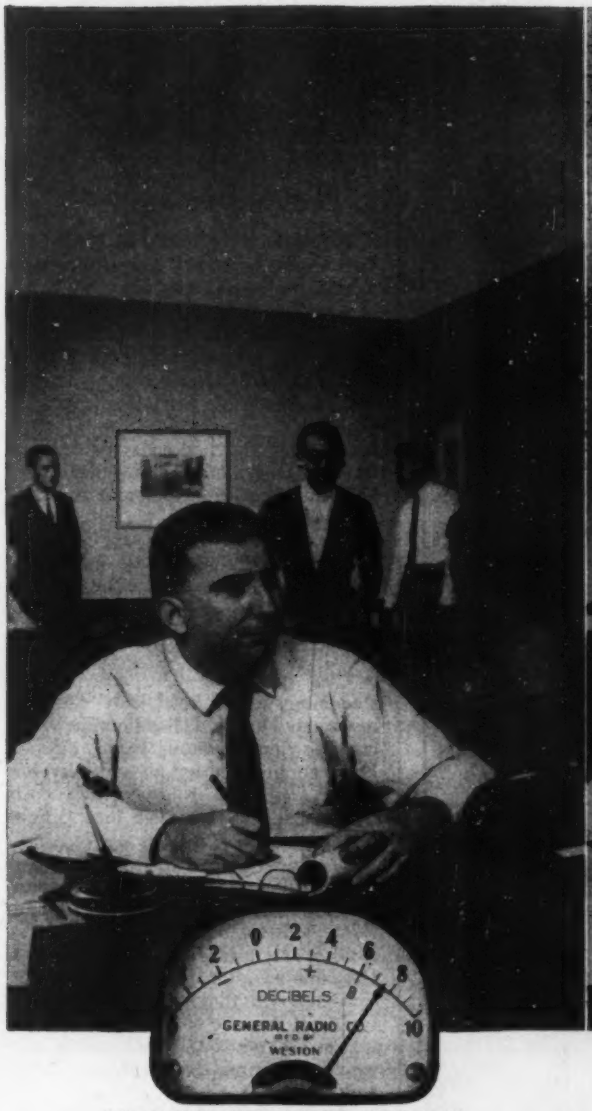
When the first rush, then in gas, started in 1950, Durango was the big town with a population of 7,459. Today it has grown to 9,494, but it has long since been passed by Farmington. In 1950, Farmington had 3,700; today it boasts 16,500 inhabitants.

Durango is scenically situated in the Rockies. Long before there was any talk of oil and gas or uranium, it was a tourist resort, a gateway to Mesa Verde National Park and the rainbow trout streams. Durango feels it's getting its share of the boom. The motels that used to operate for tourists, hunters, and fishermen are renting to oil and gas people. Many oil and gas professional people—Durango boosters like to think they are the "more stable" type—have settled there, and most of the major oil companies have opened land and exploration offices.

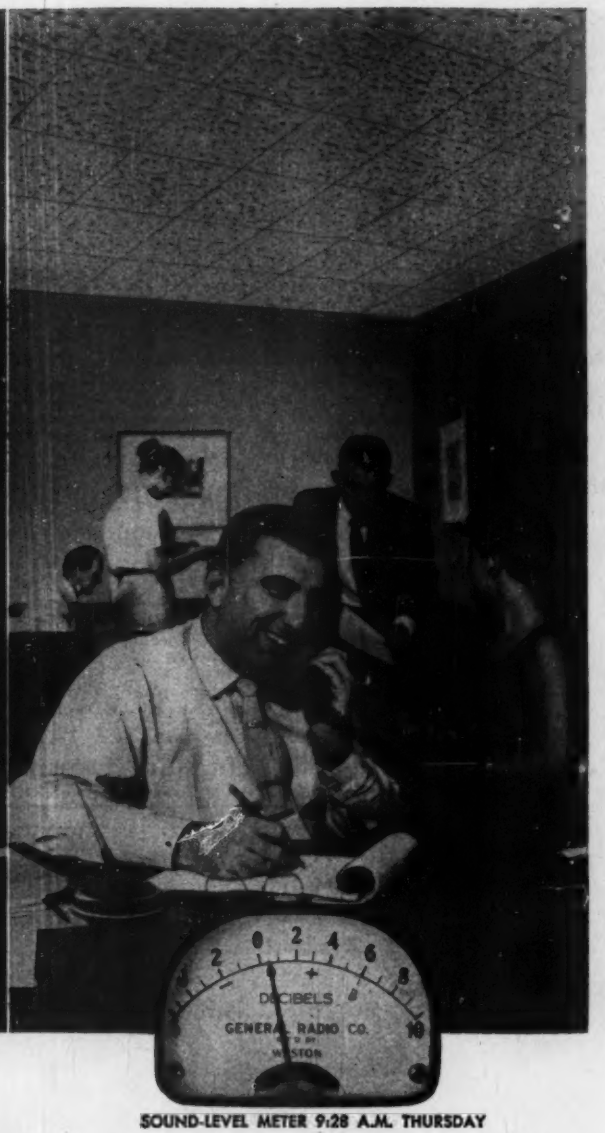
Farmington, in contrast, has no scenic setting. It lies on the drab, dusty edge of mesas. It wasn't much before the oilmen came, and it welcomed the boomers with open arms. The city has nearly 3,000 trailers within its limits, mostly in well-kept parks; trailers rent for as much as $125 a month. Durango has fewer than 1,000 trailers, while Cortez has several hundred in unattractive parking lots.

The difference between the cities, says one visitor, is that the oil and gas industry has swallowed up Farmington while Durango has absorbed a community of oil and gas people. Time will tell which growth is more sound.

Cortez, meanwhile, has grown in



SOUND-LEVEL METER 4:45 P.M. WEDNESDAY



SOUND-LEVEL METER 9:28 A.M. THURSDAY

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JOB-FITTED GLOVES

seven years from 2,000 to about 7,500 people, matching Durango for the moment. But its gain has been mostly in transient oilfield workers. When drilling passes its peak and Four Corners settles down to steady production, these people will drift away.

II. Growing Pains

This kind of growth, as many suburbs and new cities know, produces painful problems along the way. Farmington, for example, has more school children today than it had people seven years ago. Permanent housing is a worry, but the chamber of commerce has succeeded in attracting mortgage funds and construction capital from neighboring states, even as far away as Kansas. Last month alone, plans were announced for 900 homes in the next few years.

Durango and Cortez are planning new sewerage systems to meet new needs, but Farmington has already built a safe reserve capacity. Farmington also owns a multimillion-dollar electric plant.

• **Cost of Living**—The area has no standard-gauge railroad—only the narrow-gauge Denver & Rio Grande Western line from Alamosa, Colo., through Durango to Farmington—and very few paved roads. So transportation costs make it expensive to live in the Four Corners cities.

Groceries and fresh vegetables cost 10% to 15% more than in Texas and California. A small avocado from California sells for 50¢. Whiskey runs $1 or $1.50 per fifth higher than in Texas. Haircuts—which require no transportation—also sell at boom prices; $1.85 is standard. An acre building lot in Farmington, if you could find anyone who would sell, would cost between $3,000 and $4,000.

However, oilfield workers make more money in the Four Corners area than in most places. Hourly rates are the same, but they are being worked 60 or 65 hours a week instead of the average 45 or 50 hours elsewhere.

III. Rugged Individualism

Even in an "orderly development" steered by the big oil companies, there's still room for the independent spirit. It shows up in the sturdy refusal of Indian sheep herders to be awed by the sudden traffic of oil company trucks over roads newly bulldozed through the scrubland.

One Indian was alarmed about the safety of his sheep, though. He installed three signs at the roadside, a hundred feet apart. The first simply said, "Danger." The second said "Please to Slow Down." The last one said, "O.K." It was punctuated by a ditch

Now! Skyscrapers in Porcelain Enamel

Porcelain enamel curtain walls bring durable, colorful beauty to America's changing skyline

Architects are creating new kinds of skyscrapers—modern buildings that combine the beauty of color with lightweight, space-saving construction.

Basic feature of these graceful new buildings is their "curtain wall" design. This new type of architecture encloses the structural framework with a light, durable, but thin skin of porcelain enamel panels. Many tons of Armco Enameling Iron are used as the base metal for these modern curtain wall structures.

Complete with insulation, porcelain enamel curtain walls are only 1½ to 3 inches thick. They are only a fraction of the weight and have the same insulating value of slow-to-erect masonry walls 12 to 18 inches thick. Valuable rental space is saved. Fast construction permits early occupancy. The lightweight panels make it possible to reduce the size and cost of structurals and foundations. And the hard, glass-like surface of porcelain enamel panels, available in any color, is virtually immune to weathering.

More than 40 years ago, Armco Steel Corporation pioneered the development of a special enameling iron for porcelain enameled products of all kinds. Today one of its biggest and most dramatic uses is in America's new thin wall skyscrapers. If you are planning a new building, it will pay you to find out more about porcelain enameled curtain wall construction.

For more information write Armco Steel Corporation, Middletown, Ohio.

← Curtain wall buildings go up fast. Panels are simply bolted into place. In a matter of days a new lightweight skyscraper is color-clad in porcelain enamel.

From coast to coast — from → Panama to Canada — porcelain enamel curtain walls are adding efficiency and colorful beauty to buildings of all sizes and types. At right—the distinctive new B. C. Electric Building in Vancouver, British Columbia.

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Distinctive appearance is only one of the important reasons HAUSERMAN Interior Walls are used in this attractive, executive office. Movability is important, too. It provides far-seeing management with the means of rearranging office plans to maintain efficient utilization of floor space regardless of future requirements.

Also on the practical side is the low cost of preserving the handsome appearance of HAUSERMAN Walls. The baked-enamel colors need only periodic washing to restore their original beauty. Expensive repainting is forever eliminated.

More of the profit-making benefits of HAUSERMAN Walls are explained in the booklet, "How Eight Companies Saved $595,363". Have your secretary write today for a free copy. Or, better yet, consult the Yellow Pages (under PARTITIONS) and call your nearest HAUSERMAN representative.

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FARMINGTON parks 3,000 trailers. Many camps post permanent no-vacancy signs.

cut two feet deep across the road.

Rugged independence shows up, too, in the way a few local people found ways to share in the boom, not by selling $1.85 haircuts or renting roosts for trailers but by the basic land-leasing and well-drilling. That's where the millions are made.

• **Big Wheel**—Best-known of the independent operators in the area is Tom Bolack (picture, page 89), 42-year-old Farmington tycoon and politico. Bolack was working as an oilfield roughneck at 16; today he estimates his worth at about $3-million. He owns an interest in at least 40 producing gas wells in the San Juan Basin and owns outright five oil wells. He's also president and a shareholder of Petro-Atlas Oil Corp., whose majority stockholder is Floyd Odlum.

Bolack got rich by anticipating the boom. Long before El Paso Gas aroused real interest in the San Juan Basin, he was telling all who would listen that there was a lot of oil and gas under the ground. Back in the 1940s, he and a few others bought up leases at 50¢ an acre. Most sold out when the boom rode prices up to $300 and $400 an acre. But Bolack and a very few others stayed to the four-figure level.

When his predictions came true in the 1950 gas boom, delighted Farmingtonians elected him as mayor. But he scared them when he promptly built 14 mi. of paved streets at a time when the town had only one 20-ft. paved highway down the main stem. Townspeople couldn't conceive of any population growth that would justify such spending, so they defeated Bolack for a second term.

Farmington's growth has long since

U.S. Navy Photo

The Variable Angle Launcher, one of NOTS' test facilities, is considered the largest "blow-gun" in the world. Experimental missiles are blown into the water through a 300-foot long launching tube.

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Established in 1943 by the Bureau of Ordnance, NOTS is the "home" of weapons such as the 2.75" MIGHTY MOUSE air-to-air rocket and the recently unveiled SIDEWINDER guided missile. These weapons are products of an effective military-civilian team at NOTS which originates and carries out weapon ideas; designing, developing, and testing guided missiles, rockets, torpedoes, armament-control systems, and other ordnance items until they are completed and ready for mass production.

Many specialized facilities enable the Station to pursue this broad program. Among these are highly instrumented test ranges, transonic and supersonic test tracks, facilities for the development and pilot production of solid and liquid propellants, a naval air unit equipped with planes of many types, a multimillion-dollar research and development laboratory, and other installations.

The main facility of NOTS encompasses over 1,200 square miles of the Mojave Desert 155 miles north of Los Angeles, while underwater ordnance activities are centered at Pasadena, with water test ranges located at Morris Dam, Long Beach, and San Clemente Island. About 4,800 scientists, engineers, and other civilians, and 1,200 military personnel at NOTS installations are constantly striving to develop better weapons for our nation's defense.

This is one of a series of ads on the technical [illegible]

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justified Bolack's action as mayor, and his political star is high again. In the last Congressional election, Bolack ran as a Republican in a strongly Democratic district and lost by only 7,000 votes. A close friend says he'll eventually run for governor, and Bolack told a BUSINESS WEEK reporter a few days ago that he could probably be had when the time is ripe.

IV. Wells and Pipelines

The name of El Paso Natural Gas is magic in Farmington. Its gas pipeline to California started the boom in 1950-51; its headquarters building across the street from City Hall is continually growing. It has nearly 1,000 year-round employees on its San Juan Div. payroll; 2,462 of the 3,000 gas wells in the San Juan Basin are dedicated to El Paso's system.

Most of these wells serve the pipeline to California; 299 are tied into Pacific Northwest Pipeline's line to the Northwest. Early this year (BW—Jan.26'57, p76) El Paso merged with Pacific Northwest, bringing on an antitrust action by the Justice Dept. (BW—Jul.27'57, p46).

• **Following the Pipe**—Rarely has pipeline development so dominated the oil and gas prospects of a region. But until El Paso announced its line, the discoveries of the previous 30 years were meaningless.

Oil had been found in the 1920s in small fields with picturesque names: Rattlesnake, Hogback, Table Mesa. Other scattered discoveries came in the '30s and '40s, but it still was cheaper to produce and market oil and gas from other places. In 1950, there were about 100 gas wells in the entire San Juan Basin; today, 3,000-plus. El Paso produces by far the largest share of the basin's gas output of 900-million cu. ft. a day. Gas reserves are figured at 22-trillion cu. ft.

Along with gas, El Paso found oil in the San Juan Basin, while Shell Oil Co. pioneered the Paradox Basin. El Paso brought in its discovery well in the Bisti Field, an hour's drive south of Farmington, in September, 1955, and more than 70 wells are ready to produce there. Most of the wells, which yield an average of 250 bbl. a day from 5,000 to 5,500 ft., are capped until the crude line is built. Tank farms for storage are much too expensive to build in this wilderness.

• **Cheap as Water**—The few independents and small companies on the fringes of the San Juan fields do sell some of their own oil. The price is around $2.50 a bbl., plus about 30¢ a bbl. for trucking. This oil is sold mostly for use nearby to fracture the sandstone formations and make new wells produce. Water could be used

With DRAFT-A-MATIC... a complete work station in 32 square feet

12 draftsmen can work comfortably in the space previously required for 9 men

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Why? Because they're all built into Draft-a-Matic itself. To consult a reference, a man simply swivels around in his comfortable GF office chair, draws out the adjustable shelf of the Draft-a-Matic immediately behind him and there he has a smooth, resilient Velvoleum writing surface, with file drawer and bookcase below.

Draft-a-Matic provides a complete work station in only 32 square feet. This saving of one third in floor space permits 12 draftsmen to work comfortably in the area usually required for nine.

Space-saving compactness is just one valuable feature of Draft-a-Matic. Most revolutionary is the traveling plastic Flexi-Belt. This Flexi-Belt and Roto-Positioner bring the drawing to the draftsman, regardless of its size, so he works without stretching, or standing, or stooping. Such convenience and comfort enable a man to put in many more productive hours with far less fatigue than comes with the conventional drafting board and stool.

See Draft-a-Matic in the local GF showroom. Find the address in your phone book. Or write for a folder, "Introducing the new Draft-a-Matic." The General Fireproofing Company, Dept. B-89, Youngstown 1, Ohio.

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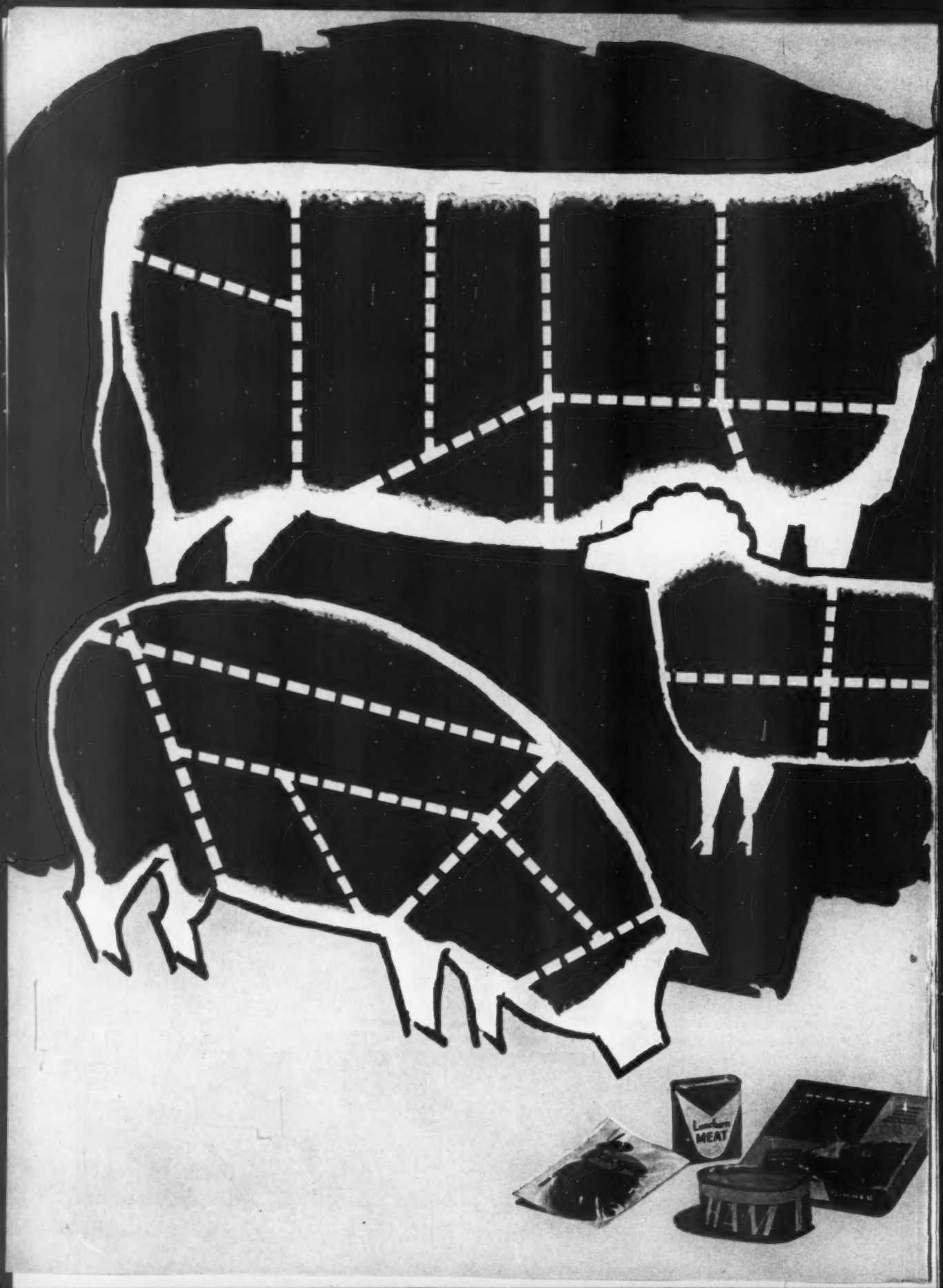
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Whether your meat product is beef or lamb... pork, veal or ham... frozen, pre-cooked or freshly cut... chopped or sliced... dried, smoked or spiced... formed into a loaf, or rolled up in a ball..
Continental has the right package for you!
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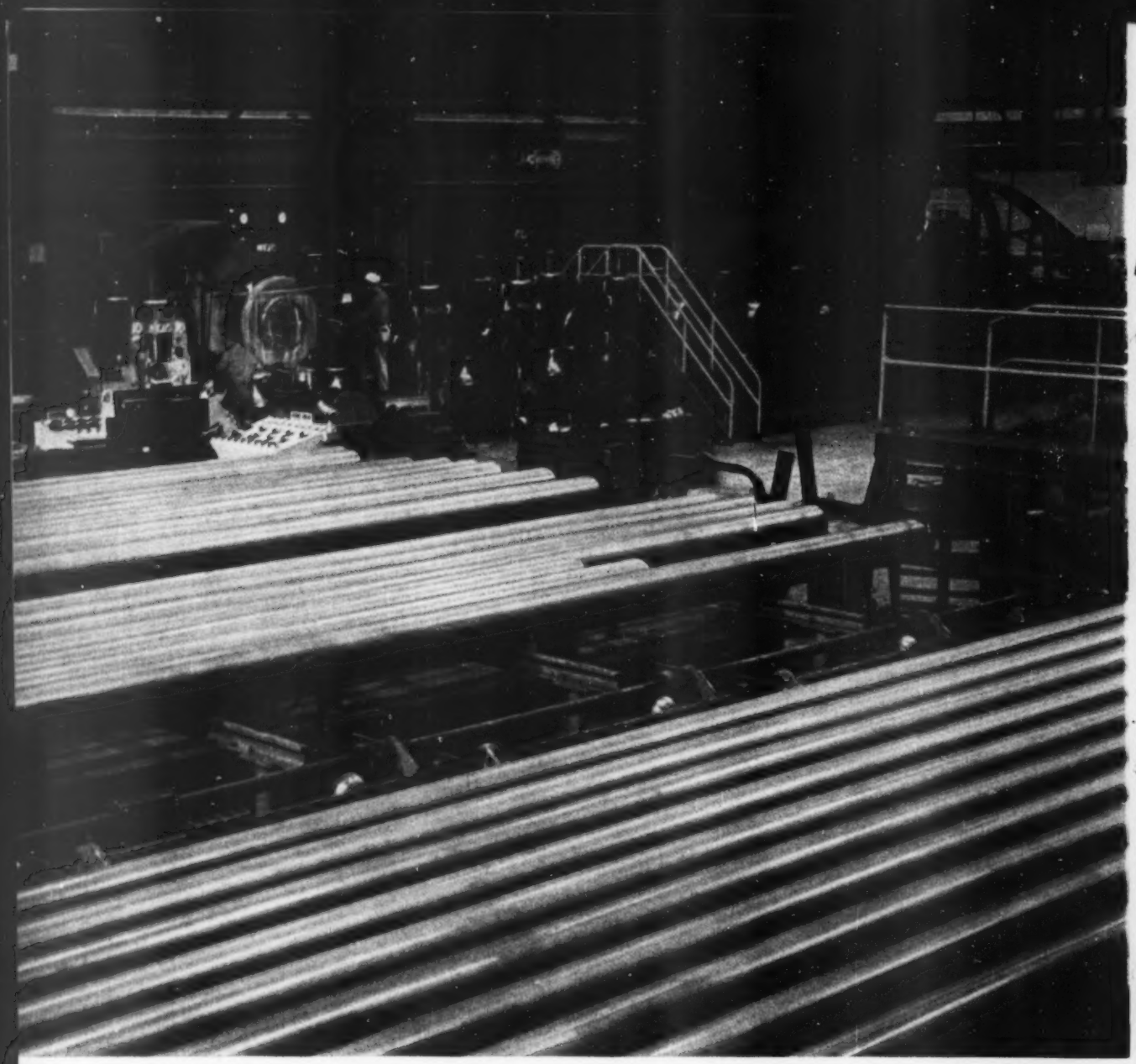


NEW MILL AT J&L'S ALIQUIPPA WORKS PRODUCES ELECTRIC WELDED PIPE UP TO 12¾" OD IN LENGTHS TO 60 FEET PHOTO BY HANE

New source of pipe for a growing America

This continuous, high speed Electricweld pipe mill, newest of its kind, produces high quality pipe of varying diameters primarily for the gas and petroleum industries.

Built at a cost of $8 million, this modern mill is the latest addition in our current expansion and improvement program. Principal goal of this J&L program is the production of more steel more efficiently for modern living and defense. This new Electricweld pipe mill is yet another example of how skill and planning for the future contribute to progress at J&L.

J&L STEEL

Jones & Laughlin
STEEL CORPORATION · PITTSBURGH

J&L...A GREAT NAME IN STEEL

". . . oilmen are itching to get into the remaining basin area—Black Mesa—in Hopiland . . ."

STORY starts on p. 88

in many cases, but water costs as much as oil in this arid region. Besides, the oil forced into the sandstone can be recovered.

Trucking oil very far in the Four Corners area wouldn't pay. "Roads" are mostly mere bulldozer tracks, and the frequent desert flash floods can wash one out in minutes. At best, they are full of chuckholes and shallow ditches that slow trucks to a crawl. The nearest standard-gauge railhead is on the Santa Fe at Gallup, N. M., 150 mi. south of Farmington.

• **Paradox Basin**—Shell Oil wildcatted a 10-bbl. per day well in 1951 near Bluff, Utah, but the Paradox boom dates from 1954, when Shell brought in a 1,170-bbl. well at Desert Creek, Utah. This really fired up oilmen to buy leases throughout the area.

Leases had been going at $2.50 an acre. Since 1954, Texas Co. has paid as high as $2,133 per acre. And a combine of Pure Oil Co., Sun Oil Co., and Ohio Oil Co. paid the record price of $3,102 an acre for 2,560 acres of Navajo land at a sale of 30,000 acres of leases that brought the Indians $25-million in all.

About 90 wells have been completed in the basin, with tests showing a flow of from 500 to 3,000 bbl. a day. This includes 53 wells in the Aneth field.

• **Hopiland**—No wonder, then, that oilmen are itching to get into the remaining basin area—Black Mesa. But this basin is in Hopiland, the reservation within the Navajo reservation. The Hopis claim an area about 55 mi. by 70 mi., but the Navajos insist that 75% of this land is theirs.

Besides this dispute, prospecting is balked by the Hopis' refusal to lease any mineral rights. They have allowed pipelines to come through, though they are reluctant to permit any digging at all. Elder Hopis cling to a religious belief that the spirits will be disturbed by any digging. The government estimates that Black Mesa contains 2-billion tons of coal that can be surface-mined. So far, that's the only measure of Black Mesa's resources.

• **Two Pipelines**—Besides the existing gas lines, two pipelines for crude oil are pushing through Four Corners.

The larger is Four Corners Pipeline, scheduled to start delivering to Los Angeles refineries about Feb. 1. It is 754 mi. long, costs $50-million, has an

BRISTOL LIQUID LEVEL RECORDERS at Yorktowne Paper Mills Inc., York, Pa.

Instruments aid quick-change production

At Yorktowne Paper Mills Inc., York Pa., the product being run off the production lines is changed up to five or six times a day!

Makers of high-quality box board for a huge variety of folding and set-up boxes . . . suit boxes, pastry cartons, etc. . . . Yorktowne Paper's contract commitments keep production men constantly on the move, satisfying each customer's specific requirements. They need exact knowledge of stock levels in "liner" and "filler" chests, so that there will be no shortages, no costly over-runs on any order.

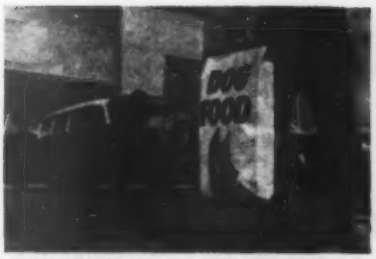
Providing that exact, up-to-the-second information, as well as permanent plant records is the job of the Bristol Liquid Level Recorders (above)—just one of the thousands of similar jobs these rugged, simple instruments are performing today with an unexcelled record for accurate, trouble-free performance.

Let a Bristol man tell you how Bristol instruments can help your plant or process. They can measure, record, or automatically control almost every industrial variable. They can help you get small-batch quality on a production basis, and they can speed production and cut costs in a host of other ways. Other precision Bristol products: The most complete line of socket screws on the market—sold through leading industrial distributors—and a huge variety of aircraft and guided missile components. The Bristol Company, 164 Bristol Road, Waterbury 20, Connecticut. 7.35

BRISTOL *TRAIL-BLAZERS IN PROCESS AUTOMATION*

AUTOMATIC CONTROLS • RECORDERS • TELEMETERS • SOCKET SCREWS CHOPPERS AND HIGH-SPEED RELAYS • AIRCRAFT PRESSURE-OPERATED DEVICES

Bemis flexible packaging may solve your problem



PICKUP for hung-over sales curves! Bemis Handle Bags make it *easy* for the customer to buy the giant economy size of dog food, salt, peat moss—anything you'd package in bags up to 30-lb. capacity. No wrestling, no dropping—no lost sales! Could a Bemis *flexible* packaging idea "put a handle" on your product? It's worth your inquiry.

HOT IDEA FOR COLD BEER! It was just a polyethylene bag until imagination went to work. Filled with cracked ice, this Bemis Drawcord Bag is the lightest beer cooler ever . . . empty, it's perfect for wet swimsuits or picnic leftovers. The brewer who used it as a merchandising plus reports a pleasant increase in sales, thank you.

WHERE FLEXIBLE PACKAGING IDEAS ARE BORN **Bemis**

Bemis may already be making the better package you need—Write:
PRODUCT DEVELOPMENT, 408-D Pine Street, St. Louis 2, Missouri

initial capacity of 70,000 bbl. a day with an eventual limit of 170,000 bbl. Shell Oil and Standard of California each own 25% of the stock, Gulf Oil Corp. 20%, and Continental Pipe Line Co., Richfield Oil Corp., and Superior Oil Co., 10% each.

The second crude oil line, called Texas-New Mexico, runs from Aneth, Utah, to Jal, N. M., where it joins a line to the Gulf Coast. Cost is estimated at more than $35-million, with initial capacity of 50,000 bbl. a day and a scheduled completion date next May. Owners include Texas Co., Sinclair Oil Corp., Tidewater Oil Co., and Empire Gas & Fuel Co.

V. After the Boom

The Four Corners prosperity isn't completely dependent on oil and gas, though other new potentials have been overshadowed in the last few years.

Mining is still a big industry in the area. Most of the uranium in the U.S. has been discovered in or near the Four Corners region. Kermac Nuclear Fuel Corp., subsidiary of Kerr-McGee Oil Industries, Inc., has a $4-million uranium mill at Shiprock, west of Farmington, and is building one six times as large at Ambrosia Lake, between Gallup and Albuquerque. Vanadium Corp. of America is another big producer.

The rare earths and the coal beds also interest mining men and local townspeople. Utah Construction Co. is considering a 1-million-kw. steam power plant west of Farmington, to be fueled by coal from 8,000 acres of land it already owns. This plan is locally regarded as the beginning of a petrochemical center at Farmington. The power, along with local abundance of oil and gas, could attract major chemical companies. It might also bring an aluminum plant based on domestic bauxite ore.

• **Less Isolation**—But the area will need better transportation and communications. Local interests are begging the Santa Fe and the Denver & Rio Grande to build standard-gauge railroads to Farmington. Roads must be improved, too.

Just this summer, the communications bottleneck was broken. Until three months ago, there was only one long-distance telephone circuit out of Farmington, and oilmen sometimes waited a day and a half for their turn at this line. The oil companies turned to telegraph and two-way radio. (El Paso alone has more than 300 two-way radios in its vehicles, in Four Corners.)

"Before the phone company started putting in more circuits," one oilman says seriously, "You could drive, to, say, Blanding, Utah, and place a call to Hong Kong easier and faster than you could reach Farmington." END

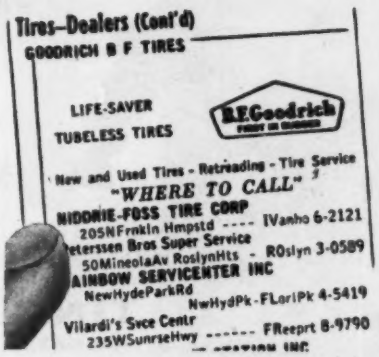
"YELLOW PAGES ARE THE BEST LINK BETWEEN NATIONAL ADS AND LOCAL DISTRIBUTION"

says Glenn E. Martin, B. F. Goodrich Tire Ad Manager

"We're thoroughly sold on Trade Mark Service in the Yellow Pages of telephone directories," says Mr. Martin. B. F. Goodrich has been using this service for 25 years. Dealers in towns over 10,000 population may now participate.

Mr. Martin explains "We distribute through so many different types of outlets that it is an absolute necessity to use Trade Mark Service to identify them."

Find out how this dealer identification plan can build your sales. Your Trade Mark Service representative can supply you with information on buying habits in selected regional and national markets to help tailor Trade Mark Service to your needs.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SELLS FOR B. F. GOODRICH. Typical B. F. Goodrich listing shows how simple it is to find local dealer.

SELLS FOR DEALERS. Hempstead, N. Y. dealer Niddrie likes the way Trade Mark Service builds sales.

WORKS FOR CUSTOMERS. It's so easy to find a B. F. Goodrich dealer—a flip of the Yellow Pages does it.

On the country's finest office chairs you'll find Bassick casters and Flo-Tilt chair controls. Bassick casters assure you of

EASY ROLLING

and protect floors. Easy swiveling, too. Look for Bassick casters as a sign of quality on all office and industrial equipment.

Another mark of quality in office chairs is Bassick's exclusive Flo-Tilt chair control. Its rubber torsion unit gives you

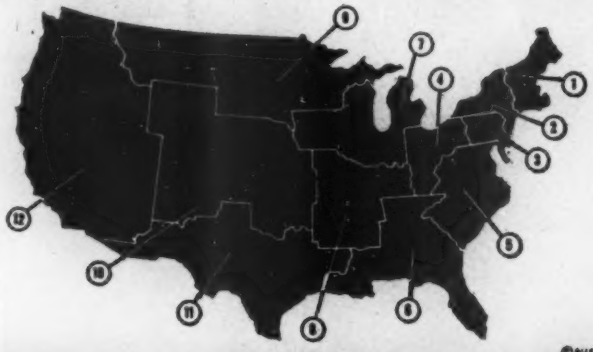
SAFE TILTING

action and never lets go. Ask for Flo-Tilt controlled chairs. THE BASSICK COMPANY, Bridgeport 5, Conn. *In Canada:* Belleville, Ontario. 7.20

Bassick
A DIVISION OF SW
MAKING MORE KINDS OF CASTERS ... MAKING CASTERS DO MORE

The Income Pattern:
Business Week's Regional Income Indexes

U. S. Incomes: Up 5.7% From Last Year



©BUSINESS WEEK

Federal Reserve District	% Change vs. year ago	The Indexes: June 1957	May 1957	June 1956
1. Boston	+5.3%	287.4	289.6	273.0
2. New York	+5.8%	301.8	300.8	285.2
3. Philadelphia	+5.3%	307.2	303.9	291.8
4. Cleveland	+2.7%	352.1	351.9	342.9
5. Richmond	+7.0%	380.4	382.3	355.4
6. Atlanta	+6.9%	469.2	460.6	438.8
7. Chicago	+6.2%	366.2	362.8	344.7
8. St. Louis	+3.8%	332.1	335.6	319.8
9. Minneapolis	+5.6%	369.4	369.4	349.8
10. Kansas City	+4.6%	421.6	416.3	403.0
11. Dallas	+7.6%	518.3	503.1	481.9
12. San Francisco	+6.3%	410.3	408.9	386.1
Nation	+5.7%	362.3	360.4	342.8

1941=100; adjusted for seasonal. June figures preliminary; May revised.

Still Scaling the Heights

Income level hits 11th monthly peak in a row, with Dallas out in front both in year-to-year and month-to-month gain.

U. S. incomes in June moved to their 11th successive monthly peak—5.7% above June, 1956—according to BUSINESS WEEK's Composite of Regional Income Indexes. Broken down by regions, the year-to-year gains ranged from 2.7% in Cleveland to 7.6% in Dallas. Cleveland's margin over the preceding year has been lagging somewhat behind the national average for nine months. In Dallas, on the contrary—except for a couple of months in the spring—incomes have tended to rise faster than the national average.

In the month-to-month comparison, the nation's income moved up 0.5% from May to June. Sharpest rise, again, was in the Dallas region, where June's income gain was 3% over May. This was reflected in a higher than usual level of department store sales in the region in June. St. Louis incomes declined 1% in June from their May peak. Boston, New York, and Richmond were down from earlier highs.

Many of the nation's major labor market areas continued to report local payrolls at all-time highs for the month, the Bureau of Employment Security of the Dept. of Labor says. The Bureau adds that the outlook is for rising payrolls throughout the nation over the coming months. In general, employer hiring plans as reported to local public employment offices indicate a likelihood of some payroll increases up to early autumn in most. END

WHAT WOULD THE COMPTROLLER FIND IN A REPORT FROM THE OILER?

If the oiler ever *should* make a report to the comptroller, management might pick up a valuable tip.

The report might uncover clues to hidden plant losses that have been cutting into profits. It might describe problems of keeping vital machines running . . . of lost man-hours and machine downtime . . . of oil waste and product spoilage . . . of plant safety hazards.

Management would learn that *all* these serious problems can be caused by *old-fashioned lubrication methods.* Improper, inadequate hand lubrication is the real trouble-maker!

Perhaps the same costly, outmoded system is costing *your* firm money. If you are paying the penalties of old-fashioned lubrication methods, you can get expert help from Alemite.

Alemite Automatic Lubrication saved a paper mill $3,000 a month. A leading bicycle builder is saving $1,700 a month. Companies in many other types of industry are reporting similar results with Alemite.

Modern Alemite systems automatically feed exactly the right amount of oil or grease to every lubrication point . . . keep machines running longer with less downtime . . . eliminate oil waste and product spoilage.

Let Alemite assist you in solving your company's lubrication problems. Wherever you are, there's an Alemite representative ready to serve you.

FREE! NEW BOOKLET! Send for a free copy of "An Executive Approach to Lubrication Problems." No obligation, of course.

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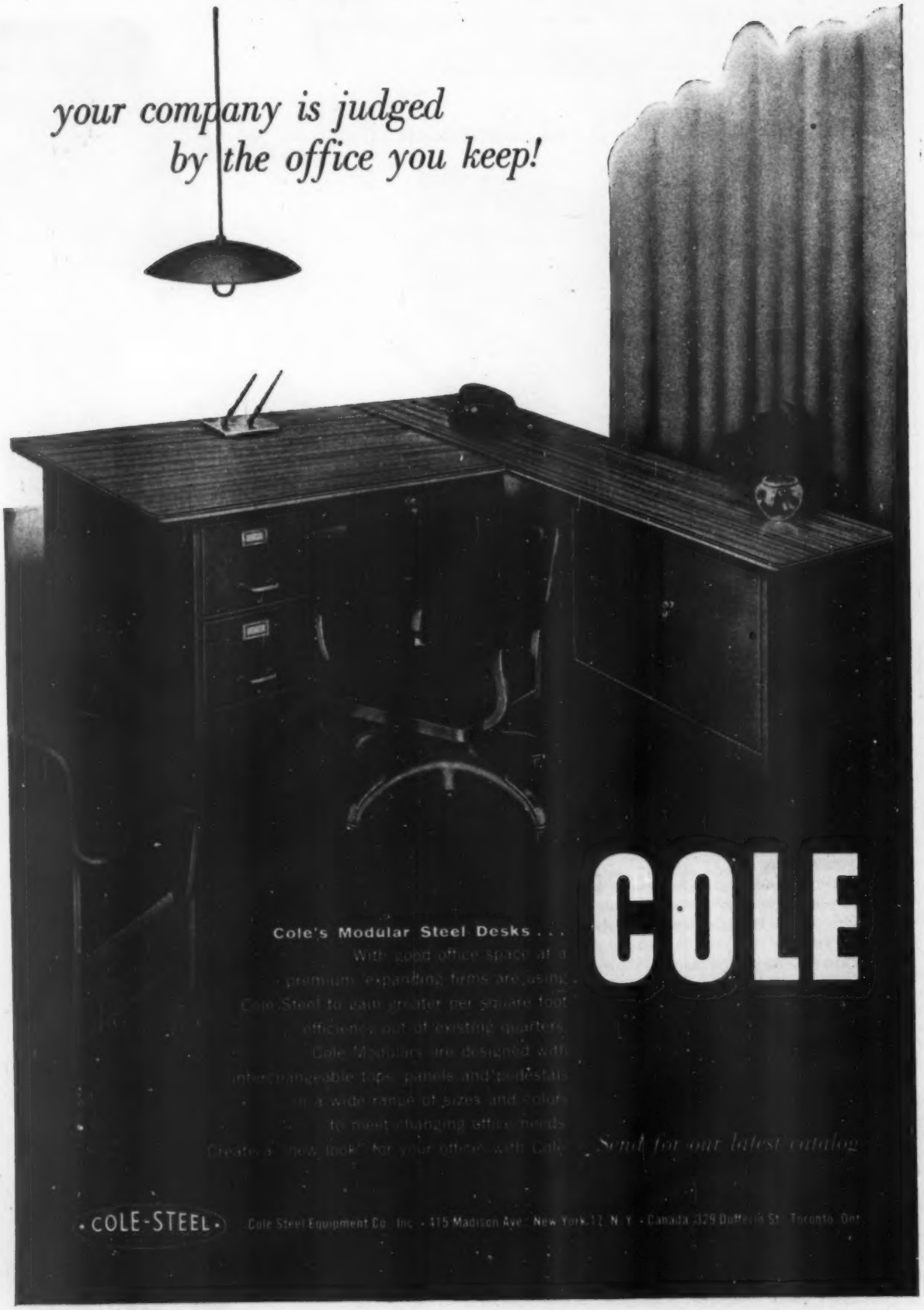
your company is judged by the office you keep!



COLE

Cole's Modular Steel Desks . . .

With good office space at a premium, expanding firms are using Cole Steel to gain greater per square foot efficiency out of existing quarters. Cole Modulars are designed with interchangeable tops, panels and pedestals in a wide range of sizes and colors to meet changing office needs. Create a "new look" for your office with Cole.

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RESEARCH

Putting Free Radicals to Work

● Scientists everywhere are excited about a kind of radical that has no politics. It's an atomic fragment that is eager to unite with another, and it's found all over.

● A new technique of freezing the mysterious particles now makes it possible for researchers to study them.

● Free radicals have a future full of promise in powering rockets and missiles, speeding chemical reactions, and producing vital substances such as ozone.

THERE'S no more striking indication of how deeply the 20th-Century technological revolution has penetrated industry than the technical words that are now part of every businessman's vocabulary. Today, atoms and molecules are apt to appear in luncheon conversation as often as wage scales and personnel relations. Polymers and process metallurgy are tossed off almost as commonly as profit and loss.

Sure to be just as familiar to industrialists of the future is another term now known only to a few—free radicals. A free radical, in this case, has nothing to do with politics. By definition, it is a fragment—an atom, a group of atoms, or a piece of a molecule—that is ready to combine with another fragment to make a stable compound. Free radicals are present, at least momentarily, in such familiar things as flames, the earth's atmosphere, and all organic matter, including the human body.

Free radicals figure in the drying of paint and the synthesis of rubber. A host of other chemical processes depends to some extent on these building blocks, normally short-lived.

Until very recently, no one knew much at all about the behavior of free radicals. Scientists have done a lot of speculating about their mysterious antics. But it has been exceedingly difficult to study them, because the most common free radicals found in nature only survive for thousandths of a second.

I. Trapping the Free Radical

However, with low-temperature techniques recently developed, these elusive, excitable chemical fragments can be manufactured, isolated, and literally frozen in their tracks for longer and longer periods of time. As a result, researchers can work with free radicals in quantity for the first time. Already, from these early experiments, it looks as if the study of free radicals may eventually explain some of nature's most puzzling phenomena. It may also make it possible to manufacture all the familiar synthetic compounds more efficiently—and to run out a whole new set of products, today completely unknown.

In fact, research in free radicals is now progressing so swiftly, one eminent physiochemist says, that it's not going too far to say that it is opening an entirely new field of science.

• **Breakthrough at NBS**—In the past five years, scientists at various U.S. laboratories have devised a number of ways to capture and store free radicals for study. The biggest breakthrough came three years ago at the National Bureau of Standards laboratories in Washington, D. C. Researchers there found they could store some types of free radicals, in a highly excited state, for a considerable time by flowing gases through a high-frequency electrical discharge and then trapping the products on a surface cooled by liquid helium to a few degrees above absolute zero.

In their experiments so far, NBS scientists have used this method to produce atomic nitrogen, oxygen, and hydrogen, as well as some of the simpler hydrocarbon radicals.

II. What to Do With Them

This process of freezing free radicals opens a wide range of possibilities. At least potentially, for example, free radicals might become a future source of rocket power. The reason is simple: Even when they are frozen into inactivity, free radicals are still basically unstable as long as they stay separate. Just a little heat will encourage them to fly together again, and this releases great quantities of stored energy, principally as heat.

• **Color Flashes**—A few frozen nitrogen radicals, for instance, respond to a 20-to-30-degree temperature rise by emitting a spectacular green light, visible even in a well-illuminated room. While the temperature is changing, the green light is punctuated by brilliant blue flashes and flames. Free radicals of organic compounds such as methane give off a characteristic red light as they recombine. Free radicals of hydrogen, it is believed, produce a yellow flash when they are warmed.

If just a few frozen free radicals will react this way in the laboratory, it should theoretically be possible someday to magnify the effect many times over. The free radicals could be stored as a reservoir of energy. Since only a temperature gauge would basically be necessary to control the rate at which energy would be released, such a system might prove a reliable and extremely powerful source of fuel for rockets and missiles.

• **Near View**—Other uses for free radicals may be much closer. Among them is the possible development of new chemicals with special properties that can't be obtained today.

Scientists have long suspected that many chemical reactions are triggered by the momentary presence of free radicals. In effect, the free radicals act as a messenger boy, carrying energy through a chain of events in the chemical reactions. Some chemical syntheses, however, have defied research. For one reason or another, a chain of events just won't occur the way the scientists want. Either the reaction stops completely, or it takes a path different from what they desire.

But if frozen free radicals could be fed into the system at the propitious moment, such problems might be overcome. Scientists now know that it takes only comparatively few free radicals (something like 1 per 1,000 molecules) to keep a chain reaction going with relatively inactive substances. Free radicals might also be able to provide the atom or molecule fragment needed to cause a desired combination. If they could, says one chemist, "it would be like being given the master key to the chemistry of the universe."

• **Step on the Gas**—On a less visionary level, there's every reason to suppose that free radicals could be harnessed to speed up some chemical reactions that are costly and slow today. And it might be possible to put them to use in totally new production techniques to replace some of the low yield processes that are now vexing to industry.

For example, it has already been suggested that free radicals might go to work producing ozone. Ozone is a powerful oxidizer important in high energy

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It's the squeeze-to-use utility of the BRACON plastic tube that enables the housewife to lay strips of cheese just where they're wanted . . . quickly, easily, and no utensils to wash afterwards. Always soft and ready to use . . . all three flavors of CHEEZ PRESTO store safely at room temperature.

There are other advantages to BRACON squeeze-to-use packaging. Test market and panel tests repeatedly show that housewives desire the extra convenience of these functional packages which come to them at no extra cost. Attractive printing and unique point-of-sale displays catch their eye . . . the soft pliable polyethylene intrigues their touch . . . invites usage.

BRACON plastic tubes, bottles and cans are now packaging nationally branded products of all types. They are equally adept for creams, liquids or powders. If your merchandising needs a packaging pick-up, investigate BRACON squeeze-to-use containers, today. They're new!

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A SUBSIDIARY OF AMERICAN CAN COMPANY
Maynard, Mass.—*New York, Chicago, Los Angeles, Toronto*

". . . free radicals may be applied to obtain ozone on a commercially feasible basis . . ."

STORY starts on p. 111

fuels (BW—Jul.20'57,p72), with a potential far beyond the uses known today. But current production methods yield so little that it's too expensive for many industrial and consumer uses unless cost is not a problem.

However, in early studies of free radicals of oxygen, scientists made an important discovery. When oxygen molecules are passed through a high frequency electrical discharge and then captured as free radicals at a few degrees above absolute zero, they form—like nitrogen or hydrogen—a clear, solid, glassy deposit. When this deposit is warmed a little, however, it evaporates, and a solid violet material takes its place. The violet substance is actually a mixture of oxygen and ozone, and with more warming it produces ozone in relatively great quantities. Apparently, this occurs because of the high chemical reactivity of oxygen radicals.

Eventually, free radicals may be applied in this manner to obtain ozone on a commercially feasible basis. And other chemical reactions may possibly be initiated in a similar way, too.

III. Problems Still to Solve

But a lot of work still has to be done before uses of free radicals such as these will be practical. Scientists at the National Bureau of Standards, at Catholic University, and at a score of other university and industrial labs are trying hard to find out more about free radicals. The unanswered questions include:

- What are the properties of free radicals in all their various forms—solid, liquid, and gaseous?
- At what rate do free radicals recombine at various temperatures?
- How do free radicals react with other materials?

• **Research Tools**—When researchers find the answers to these questions of theory, they can go on to more practical matters. But now that scientists can work with free radicals frozen into solid form, they are moving forward.

- The light emitted from free radicals can be studied under spectographs (devices for photographing rays of light in the spectrum).
- By freezing the free radicals on another kind of transparent cold surface, light absorbed can be analyzed.
- A low-temperature calorimeter has been adapted to record the heat given off by a free radical as it warms.
- Solids containing free radicals

American Airlines Orders Turbine Vibration Indicating Systems

Electras and Boeing 707s equipped with new Sperry Systems

When American Airlines takes delivery in 1959 of the first Lockheed Electras and Boeing 707s, these airliners will be equipped with the latest Sperry contribution to efficient operation of prop-jet and turbo-jet aircraft —the new Airborne Turbine Vibration Indicating System.

Measuring vibration in propellers and turbines, an indicator reports continuously to the crew from unique pickups located in strategic powerplant locations. An amplitude meter plus a signal light on the cockpit instrument panel give the crew advance warning if vibration in any of the four turbines or propellers approaches prescribed limits. Corrective action can be taken quickly by reducing speed of the affected engine or shutting it down.

Pay-off is maximum utilization of each turbine's power potential and more precise control of its operation. In addition, there is less chance of engine damage due to vibration, which in turn reduces maintenance and repair costs.

For full details on this new Sperry Vibration Indicating System, and the extra margin of operating efficiency it provides for both prop-jet and turbo-jet aircraft, write our Aeronautical Equipment Division.

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SOLUTIONS UNLIMITED

Torrington is the one place where engineers work *only* on air moving problems in the development of air impellers supplying the full range of industrial requirements. As a result, more air moving problems are being studied today in Torrington's Research and Development Laboratory than anywhere else in the world. If you have product problems relating to the design, application and performance of air impellers, *talk to Torrington.*

THE TORRINGTON MANUFACTURING COMPANY
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can be studied by X-ray and electron diffraction techniques.

• In other experiments, it's now possible to use electron and proton bombardment and to test the magnetic susceptibility of free radicals.

All such experiments were impossible before, when free radicals were produced only in flames and heated gases and quickly disappeared.

• **Defense Support**—One firm index of the excitement over free radicals is the Defense Dept.'s interest. Defense is underwriting a three-year NBS program of basic research on free radicals. Half the technical staff of 50 Ph. D.'s comes straight from industrial research labs. Since the group represents oil, chemical, and aircraft companies, it's obvious that these industries hold high hopes for free radicals in such fields as exotic fuels and the like. Other companies and a number of universities are working on their own along parallel lines.

RESEARCH BRIEFS

A new color scale to measure the degree of refinement of petroleum products has been devised by the National Bureau of Standards in cooperation with the American Society for Testing Materials. Glass standards to match the color specifications of the new scale are now being manufactured, which, when put to use, should overcome most of the difficulties and discrepancies in the present method of color-grading petroleum.

•

Antianxin, a naturally occurring plant hormone, is being used successfully by University of Wisconsin scientists to inhibit the growth of laboratory-induced plant and animal tumors. The hormone, which apparently plays a role in keeping animal tissue normal, has been effective in preventing experimental tumors caused by more than 100 chemical agents.

•

Purer high-melting point metals can be produced by a process developed at the Illinois Institute of Technology. The process turns out such metals as titanium, zirconium, chromium, hafnium, niobium, and vanadium directly from their oxides through a reaction with aluminum in which complete removal of oxygen is accomplished.

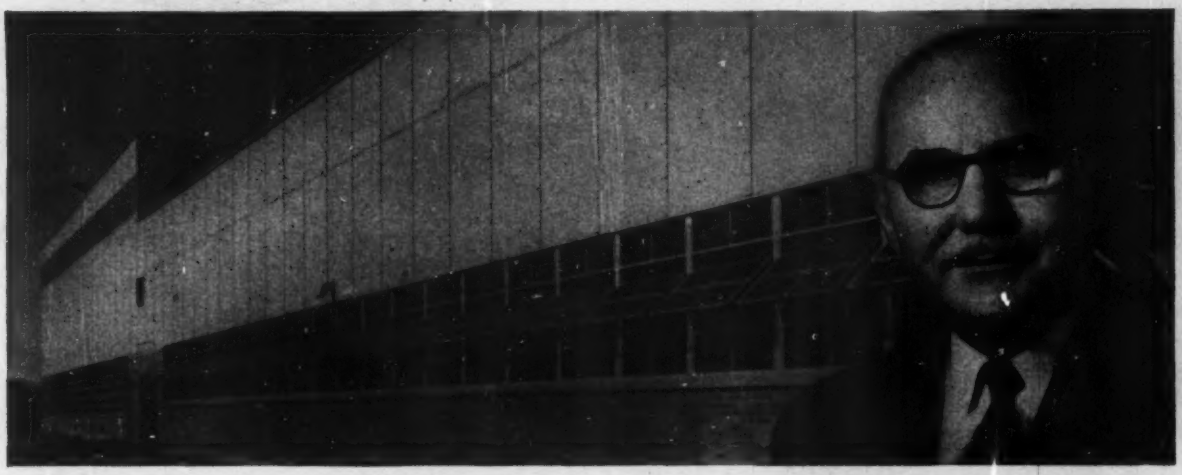
•

Rocket performance will be improved through the elimination of one technical handicap, according to the Rocketdyne Div. of North American Aviation, Inc. For some time, engineers have been wrestling with the problem of how to keep nitrogen—a rocket engine's pressurizing gas—from mixing with the liquid oxygen used as a propellant. The

"LURIA SAVED SNAP-ON TOOLS CORP. 10%

... full responsibility for construction, plus time-saving ideas, kept costs low."

WILLIAM C. NEMITZ, TREASURER



"DELIVERED NEW PLANT 6 MONTHS AFTER AWARD OF CONTRACT...

... helped us relieve congestion in existing plant and gave us more efficient production operation."

A. M. JENSEN, VICE PRESIDENT, MANUFACTURING

Architectural distinction, combined with a modern production layout for such diverse operations as forging, automatic screw machining, plating and packing, was what Snap-on Tools Corporation demanded in their new 44,000 sq. ft. plant and offices at Mt. Carmel, Ill.

What's more, they wanted the plant *fast* – to help relieve congestion in their existing plant and to provide needed capacity for relocation of production from other plants on a more efficient basis. A call to Luria provided the answer—a complete building package with many valuable innovations delivered only 6 months after awarding of the contract. Full responsibility by Luria for architectural and engineering services as well as for fabrication and construction saved Snap-on's Engineering Department considerable time, work and expense. And Luria's methods of construction, together with its complete steel stocks and modern fabrication facilities meant further savings. The Snap-on Tools Corporation not only got their building quickly but also saved an estimated ten percent.

The comments of Snap-on executives quoted here tell their own story. Luria can perform similar services for you. For further information, call the Luria representative in the cities listed below. Or call LURIA ENGINEERING COMPANY, 511 Fifth Avenue, New York 17, New York.

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DISTRICT OFFICES: ATLANTA • PHILADELPHIA • BOSTON • CHICAGO • NEW YORK • WASHINGTON • PITTSBURGH • RICHMOND • DAYTON

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Which is the best way to air condition a factory?

That depends on the factory. How big it is, what you manufacture and the number of employees you have can make a big difference.

To make sure of the best way to air condition your factory, talk with the Carrier representative in your community. He handles every type of air conditioning. (Four of the many are described at the right.) So his only interest is to recommend the type that serves you best.

Throughout the world, in thousands of dependable installations, Carrier air conditioning serves more people and more purposes than any other make. Good reason to call the Carrier dealer or office listed in your Classified Telephone Directory. Carrier Corporation, Syracuse, New York.

Ask your Carrier representative for copies of the free booklets, "Which Is the Best Way to Air Condition Your Plant?" and "Which Is the Best Way to Air Condition Your Business?" Or write to Carrier Corporation.

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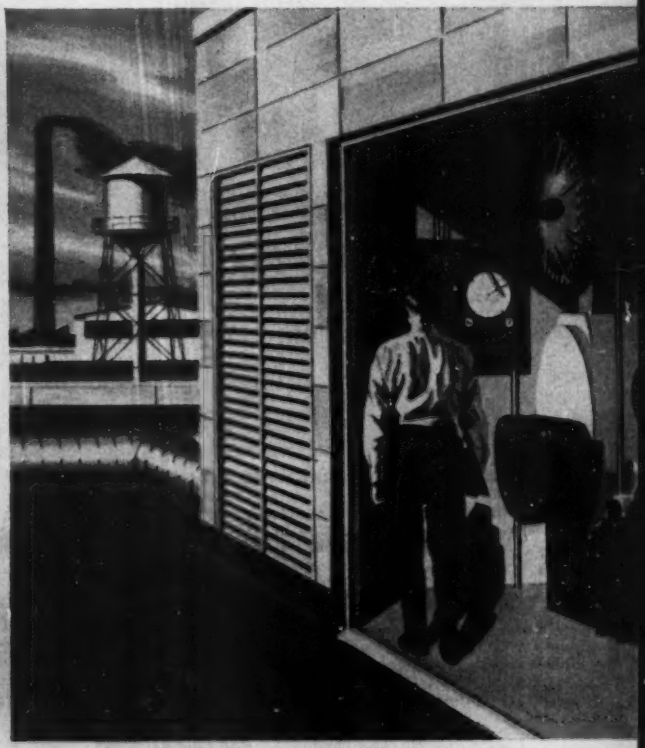
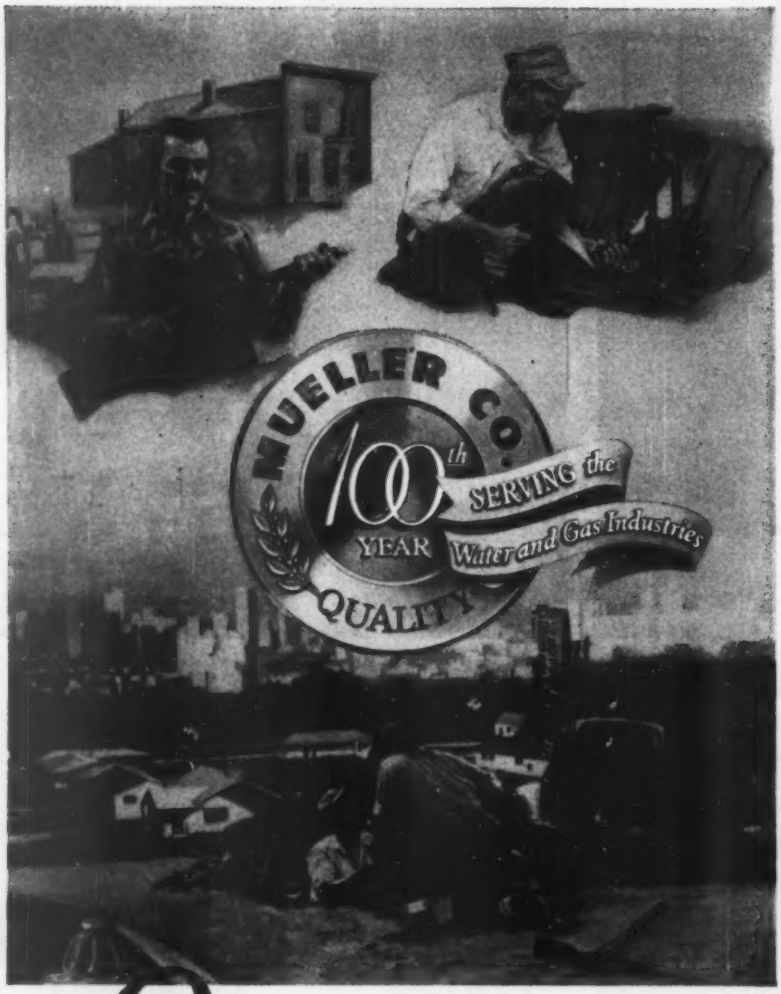


Do you have a large plant? A Carrier Spray-Coil Air Conditioner and matching Refrigerating Machine out of the way on the roof will deliver perfectly conditioned air to all parts of the factory below.

*Reg. U.S. Pat. Off.



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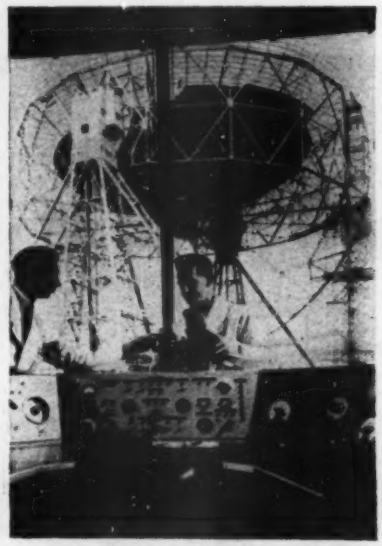
nitrogen is supposed only to push the liquid oxygen out of the fuel tank and into the combustion chamber. If it mixes with the fuel itself, it's apt to reduce the rocket's velocity. The way to prevent this is to use a perforated inlet tube to slow the nitrogen as it diffuses into the fuel, Rocketdyne says.

•

The maximum permissible dose of radiation set by the National Academy of Sciences may be too high, according to Johns Hopkins University, which has been experimenting with X-rays and human cells. NAC lists 10 roentgens as the maximum dose permissible from conception to age 30; Johns Hopkins' tests indicate there may be no safe dose of radiation considering genetic damage.

•

Reflection from the man-made satellite could be heightened by forming the outside of the satellite into a series of small flat polished reflecting surfaces, it was suggested at a recent meeting of the American Astronomical Society. The small surfaces would cast brilliant flashes of reflected sunlight as the satellite turns. The system would also show how fast the satellite is revolving, and reveal any changes in its revolutions.



Powerful Star Gazer

The radio telescope in the picture was designed for the exploration of outer space during the International Geophysical Year activities. It is claimed to be 10 times more powerful than any radio scope in existence, and its lens-less telescope is expected to reach out billions of light years, and to follow a star automatically in its course across the skies. The star gazer is nearing completion at Manchester University in England. END

Look at the Savings 3 Allis-Chalmers Lift Trucks Give Michigan Screw Products Co.

Direct cost reductions totaling thousands of dollars per year were realized when three Allis-Chalmers fork lift trucks replaced other power trucks, hand trucks and manual handling at Michigan Screw Products Co., Center Line, Mich. Here are typical savings:

Faster unloading — Unloading coils of rod formerly took several men up to two hours — now *one* man on a ram-equipped fork truck does it in an hour or less.

Workmen released for other work—two of the four men previously required in the raw material department have been released for other work.

Volume INCREASED, costs DECREASED — the three Allis-Chalmers trucks, and the palletized handling methods they made possible, have effected savings of several thousand dollars annually, *with a 40 percent increase in tonnages handled!*

Truck maintenance reduced — the cost of maintaining Allis-Chalmers lift trucks is nearly one-third less than with the lift trucks previously used — and they are back in service faster.

Safer working conditions — With fewer men involved in handling materials, there is less danger of accidents. Handling with Allis-Chalmers fork trucks has proved to be safer than other handling methods.

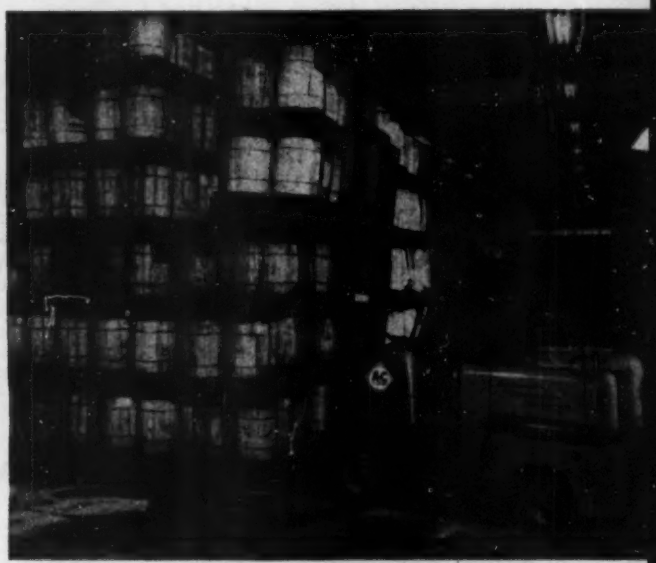
Trucks work 18 hours daily, 5 days a week

The three Allis-Chalmers trucks are on the go 18 hours per day, 5 to 6 days per week, unloading coils of rod from semi's, stacking and warehousing, moving parts in work, and loading outgoing shipments. Being in continuous service, their ability to stay on the job is especially important. That's one reason Allis-Chalmers trucks were selected by Walter E. Zawada, Vice-President.

They all like the Allis-Chalmers fork trucks

"They're brutes for punishment," commented Ernest Brown, Production Manager, "they are used to lift weights well beyond their rated capacity, yet stand the punishment very well."

"Maintenance costs are nearly one-third less than they were with the other fork trucks," says Walter E. Zawada, Vice-President. "Used to replace an engine a year — haven't replaced any in the Allis-Chalmers trucks."



"Feels like a car with power steering," says Arthur B. Wiley, Materials Handler, about the Allis-Chalmers 4,000-lb fork truck with which he is tiering finished bolts. He also likes the clear floor, and the ease of getting on or off the truck — either side.

Send for complete case study

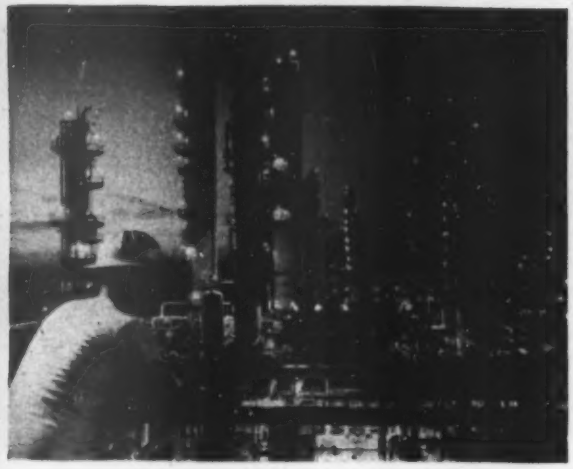
If you would like a complete 4-page case study telling in more detail how Michigan Screw Products Co. handles materials efficiently and economically to save many thousands of dollars annually, ask your Allis-Chalmers material handling dealer for Case Study No. 17 — or write direct for your copy.

ALLIS-CHALMERS, MATERIAL HANDLING DEPT.,
BUDA DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

BH-48

Government-Spawned War Baby



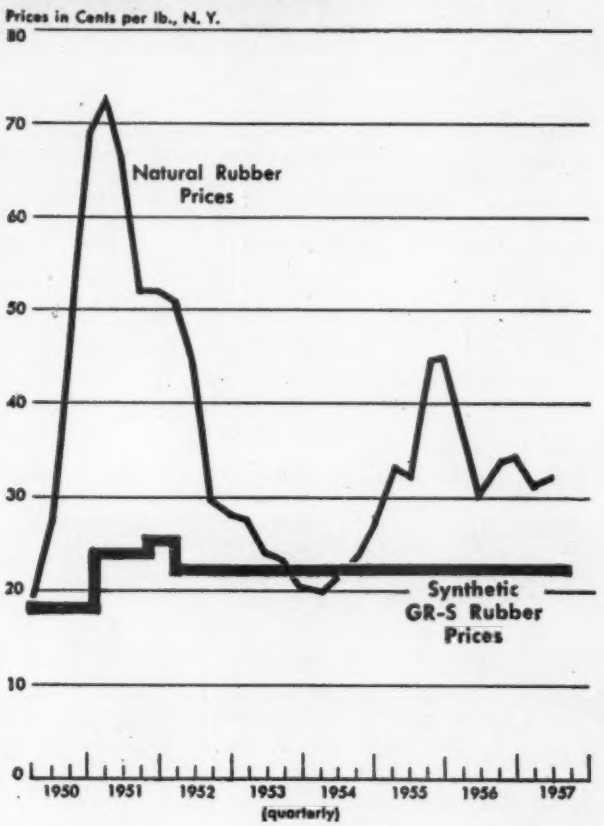
1 Synthetic rubber performs best in about a third of the uses to which rubber is put.

Natural is best for another third of the products made by rubber fabricators.

The remaining third is the field where synthetic and natural vie for use almost solely on the basis of price.

So, the stable prices of synthetic ...

STABLE PRICES



Data: Dept. of Labor. ©BUSINESS WEEK

... PLUS growing markets where synthetic is strong...

In these products	*In these products* **NATURAL** has an advantage	*In these products* **PRICE COMPETITION** is controlling
Passenger tire treads *(wear resistance)*	**Heavy-duty tires** *(heat dissipation)*	**Passenger auto tire walls**
Inner tubes *(leak resistance)*	**Surgeons' gloves**	**Machinery belting**
Fuel hose lines	**Motor mounts** *(resilience under heavy load)*	**Molded goods**
Aircraft fuel cells *(not attacked by oil)*	**Rubber bands** *(stretch)*	**Rubber foam**
Flame-resistant insulation *(won't burn)*	**Golf balls** *(resilience)*	**Rubber flooring tiles**
Electric insulation *(resistance to arcing)*	**Rubber cement** *(adhesive power)*	**Gaskets**
		Air springs for passenger autos

Weighs In as a Healthy Industry

A LITTLE MORE than two years ago, a new private industry, the synthetic rubber business, was born in the U.S. It was delivered into private hands by the federal government, and the bill for the ready-made but still infant industry, made up chiefly of 26 production plants, came to $285-million.

Since then, the industry's new owners have put $200-million more into the plants that produce synthetic rubber and the raw materials from which it's made. Newcomers who have built their own plants have put in at least another $100-million.

When the government sold out in April, 1955, the capacity of the synthetic rubber plants was 737,000 tons a year; that of the butadiene plants, which turn out synthetic rubber's chief raw material, was around 600,000 tons. By the end of this year, the extra $300-million fed into the new industry will boost butadiene capacity by 75%, and double synthetic rubber capacity.

Now, near the top of this rapidly reached peak, the industry's new owners are pausing for breath. Their plants are running at an average 70% of capacity. The leaders are ready to sit back for a spell until the economy's growth begins to catch up with their own. There'll be little expansion for at least a year.

• **Consolidation**—The pause gives the new owners a chance to look back at the record of the past two years, to consolidate their positions in the industry, to seek fresh guides for the future.

The new owners are a diverse group: chemical companies, oil producers and refiners, natural gas distributors, a couple of metal companies, even a mail order house (Sears, Roebuck & Co.)—and, of course, rubber fabricators and manufacturers.

They moved into the industry with different aims. Some sought to insure a market for their byproducts, some to protect their sources of supply, some to take advantage of what seemed a good investment. But the bulk of them, those that control the largest production, moved in because they had to. The wartime-developed art of large-scale production and fabrication of synthetic rubber presented them with a technological change that reshaped their ways of doing business.

• **Bright View**—As they look back over the record since 1955, they see it generally pretty rosy.

Certainly they bought the industry only after paying steeper prices than they had foreseen for the government-owned plants. Congress, in 1953, decided that the government should sell the plants, but it directed that the Treasury was to get "full, fair value" for them. The three-man Rubber Producing Facilities Disposal Commission bargained hard. So hard, in fact, that this is one of the few government-owned industries whose operations wound up without costing the taxpayer a cent. Compared to the $285-million it collected from the sales, the government's operating deficit through 11 years ran to only $194.8-million. The original 51 plants represented a government capital outlay of almost $755-million.

• **Softened Surprise**—The shock of paying those high prices has, since 1955, been softened considerably.

Natural rubber prices have been heading up; demand has been growing steadily; since the end of the Korean War, synthetic rubber has been gaining a rising share of an increasing market.

Says Goodyear Tire & Rubber Co.'s Pres. E. J. Thomas, "This is one of our most profitable investments." Most others in the industry don't go quite so far, but they do admit to making better profits from the manufacture of synthetic rubber than from natural rubber.

...BRINGS more demand for...

Thousands of Long Tons

		NATURAL	TOTAL
1941	6	775	781
1943	171	318	489
1945	694	106	799
1948	442	627	1,069
1950	538	720	1,258
1952	807	454	1,261
1954	637	596	1,233
1955	895	635	1,530
1956	874	562	1,436
1957	960	540	1,500
1958*	1,035	535	1,570
1960*	1,200	510	1,710
1962*	1,300	550	1,850

*Data: American Rubber Mfg. Assn. *Business Week Estimates.*

I. Search for Synthetic

The product that's commonly called synthetic rubber comes under several more precise names. More than 80% of it is general-purpose synthetic, or GR-S. Three special-purpose synthetics make up the remainder of what's consumed: Neoprene (9%), butyl (7%), and N-type rubbers (3%).

Rubber company researchers have also turned out at least three types of so-called "synthetic natural" rubber, chemical compounds whose molecular structure is either the same or almost the same as natural rubber's, and whose performance in tests is comparable to that of natural rubber. These synthetic natural rubbers aren't yet commercially practical: To produce them would require a whole new series of plants; meantime, production prices wouldn't allow these types of synthetics to compete with natural rubber.

• **Old Search**—U.S. industrial chemists tried to synthesize a chemical substitute for natural rubber even before World War I. They had as much reason to look for a substitute then as they did in 1942. It wasn't until about 1914 that natural rubber began coming from Far Eastern plantations in anything like enough quantity to meet demand. Before that, all demand had to be met by the unreliable and enormously expensive method of tapping wild rubber trees growing naturally in the jungles of Brazil. In those days the price of rubber sometimes soared to $4 a lb.

A quarter-century later, Germany's preparations for war spurred the next major search for a commercially practical synthetic rubber. Before World War II, scientists and production chiefs of Germany's I. G. Farben chemical group were ready to help the greatest part of the Nazi armies to move on synthetic rubber.

The U.S. followed in a rush right after Pearl Harbor. In 1941, the country produced some 6,000 tons of synthetic rubber. In 1945, it turned out 694,000 tons—87% of all the rubber consumed in the U.S. that year.

• **First Steps**—The wartime plants were designed and built by chemical engineers from the three major in-

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INDUSTRY'S PART... FOR PROGRESS

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dustrial groups that now control the synthetic rubber business: the chemical, oil, and rubber industries. The plants were financed by the government, operated during and after World War II by those three groups.

Each of the groups had one primary area of responsibility. Chemical companies focused their attention on the manufacture of styrene, a petrochemical that's mixed one part to three with butadiene to make styrene-butadiene rubber. Oil producers and refiners had the largest interest in butadiene, a colorless gas (liquid under pressure) formed from butane, another refinery byproduct. And the job of bringing the two together, mixing them with soap (to give the liquid mixture a milky quality, similar to natural rubber latex), and adding a catalyst was handled chiefly by the rubber manufacturers.

Through the 11 years of government ownership, operation of each of the GR-S plants was rotated among the various companies. By the end of 1954, the operating chiefs of each major company knew inside-out the intricacies and idiosyncrasies of just about each government plant. They knew, too, where money needed to be spent on the plants.

II. Intertwined Industry

Today's private synthetic rubber industry is split up along much the same lines as was operation of the government-owned business. That makes it a three-part industry, and the part of prime importance is, of course, GR-S production.

• **Big Four**—In this, Goodyear lays claim at the moment to being the largest. In May, it finished a $10-million expansion of its Houston (Tex.) plant, now rates the capacity of that plant at 224,000 tons a year. As of the end of last year, though, Firestone Tire & Rubber Co. was leader in sales and production. By 1958, the two will be neck and neck in capacity.

The other two members of rubber's Big Four come directly behind: Texas-U.S. Chemical Co., 50-50 owned by U.S. Rubber Co. and Texas Co.; and Goodrich-Gulf Chemicals, Inc., the 50-50 child at B. F. Goodrich Co. and Gulf Oil Corp.

Firestone and Goodyear are in the business independently. Firestone, for one, did not originally intend it that way. More than a year before it bought its two GR-S plants, it started talks with Cities Service Co., planning to set up a 50-50 subsidiary such as Goodrich and Gulf organized. Firestone's aim was to assure itself of a source of raw materials, probably by buying jointly with Cities Service a butadiene plant that would have run

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* Your name will appear in print here

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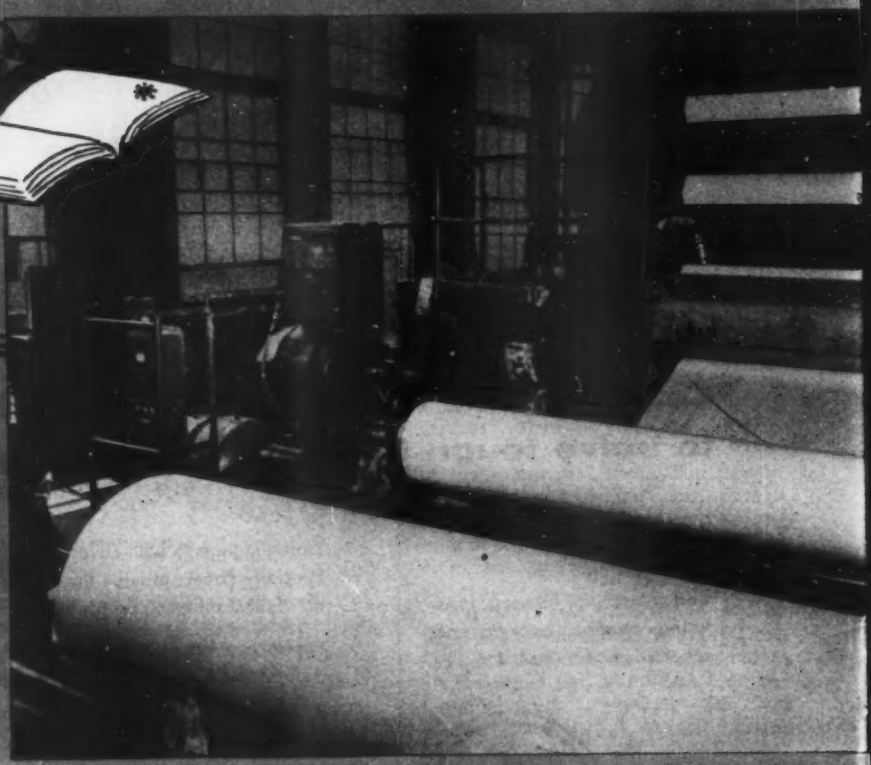
The paper industry depends entirely on automated machines such as this to keep up with the demand for paper and paper products. Directly employing over 453,000 workers, last year the paper industry produced 30,000,000 tons of paper for a per capita consumption of 419 pounds.

None of this would have been possible without the modern techniques of automation. More than a wise capital investment, automation is a general benefit to the economy of this nation.



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The eight sections of this machine are driven by a Reliance Sectional Electric Paper Machine Drive, incorporating approximately 600 hp. The machine is used to produce nineteen to thirty-two pound paper stock in 174" widths. This is the type of paper commonly used for telephone books.

Formerly limited to a range of from 400 to 800 fpm. the machine is operated now at a rate of from 400 to 1200 fpm. The Reliance Paper Machine Drive maintains perfect synchronization between each section of the machine. Without this synchronization the paper would tear, causing unnecessary shut-down and delay.

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largely on butane shipped in from Cities Service's refineries. Cities Service would get a share in the investment and assure itself of a market for its refinery byproduct.

But the talks fell through. Now Firestone has its own 50,000-ton-a-year butadiene plant in Texas, buys what extra raw material it needs from other butadiene producers. Meantime, Cities Service has worked out a 50-50 deal with Continental Oil Co., set up the jointly owned Petroleum Chemicals, Inc., and bought for $18.7-million a butadiene plant at Lake Charles, La.

Says Firestone's Pres. Raymond Firestone: "Cities Services and ourselves just decided after we'd talked a while it would be better for us to go into synthetic rubber independently."

• **Combinations**—Goodrich's and U. S. Rubber's managements didn't see it that way. Both Goodrich and Gulf and U. S. Rubber and Texas Co. started their separate negotiations about the same time as Firestone and Cities Service began theirs. These talks were fruitful: Goodrich-Gulf was formed and went into business when it paid $13-million for one 90,000-ton GR-S plant at Port Neches, Tex.; Texas-U. S. when incorporated put $11.5-million into an adjoining GR-S plant at Port Neches.

That was relatively simple. More complicated, though, was the joint purchase by Goodrich-Gulf and Texas-U. S. of a 190,000-ton butadiene plant (for $53-million), also at Port Neches. The four companies together, through the two subsidiaries, are now boosting their Port Neches butadiene capacity by 50%.

Say some in the industry whose business is not quite so entwined: "That move is about as easy as an armaments agreement among four nations. God help them, though, if they're ever put in the position of having to work out something like a disarmament agreement."

• **Consortiums**—Such business moves could be easier in an operation like Copolymer Rubber & Chemical Corp. This is a seven-company venture. Copolymer holds a butadiene plant in Baton Rouge, La., and a GR-S plant alongside it. A seven-man board of directors heads Copolymer and a full-time general manager, elected by the board, runs the company. This kind of control brings no loss to Copolymer. It paid a $100,000 dividend to each of its seven parents last year, expects to pay a larger one this year.

• **Refiners' Interest**—Oil interests are in the industry independently, too. One, Shell Chemical Corp., has a completely integrated synthetic operation. For $30-million it bought from the government a plant complex at Torrance, Calif., where it turns out sty-

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Reflecting gas industry growth, Superior Meter Company has recently opened a second plant equipped with the most modern machines and techniques. The staff has been enlarged, too, by the appointment of highly respected meter design and quality control engineers. Superior, now a subsidiary of Neptune Meter Company, continues to keep pace with the leaders of the gas industry whom it has served since 1912.

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Electronic Signal Co., Inc.	toll collection equipment, electronic scales

"... it's the rubber companies that hold greatest influence in the industry ..."

STORY starts on p. 120

rene, butadiene, and GR-S. Newcomers have been getting into the industry lately. This year alone, two new butadiene plants have come on stream.

• **Rubber's Influence**—Basically, though, it's the rubber companies—and especially rubber's Big Four—that hold greatest influence in the industry. Where rubber companies have linked themselves, through subsidiaries, with oil refiners, men from the rubber companies frequently direct the subsidiaries.

Vague rumors sometimes float around the industry hinting that relationships in these rubber-oil subsidiary companies aren't entirely happy. The rumors have it that while the rubber companies are pleased with the margins they're making from synthetic, the oil companies want to see profits pushed higher. Rubber manufacturers traditionally are pleased with a 5% profit on investment; oil companies are more used to getting back 10% or more.

III. The Cost Factor

For the rubber companies, the growth of the synthetic industry has meant a new security and stability.

They're no longer bound tightly to the world's natural rubber supply, which is highly inelastic. (It takes seven years from the time you plant a rubber tree to the time you may tap it.) This freedom has given them a chance to broaden their markets. Where 10 years ago 75% of their production went into auto tires, only 60% goes for that market now.

Simultaneously, the rubber companies have also freed themselves from the erratic movements of natural rubber prices. While those prices have been veering up and down from a low of almost 20¢ a lb. to a high of nearly 48¢ a lb. during the last three and a half years, GR-S prices have remained steady at 23¢ a lb. This price stability reacts, too, on the rubber companies' customers, who are likely to consume more when they can count on ready supplies at stable prices.

Prewar, and even in the early postwar years, rubber companies' securities were generally reckoned pretty speculative investments. That was inevitable when the industry's raw material prices gyrated so wildly. Now their securities are moving closer to the blue chip category.

• **Prices and Profits**—Since the synthetic rubber business shifted into private

man-on-the-spot

in Zürich

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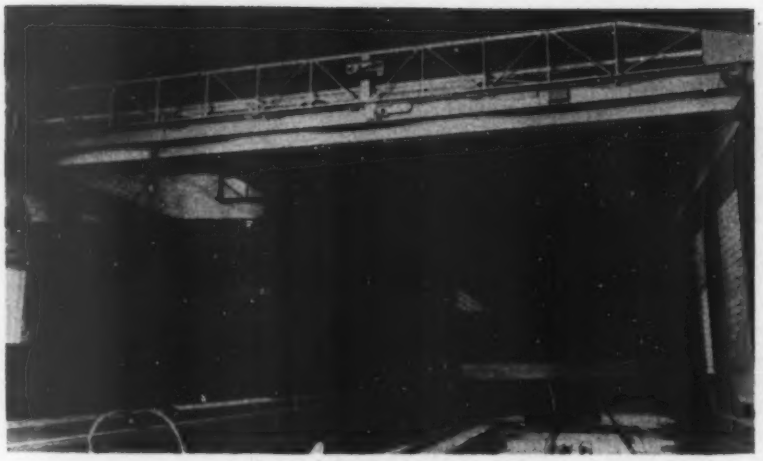

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hands there has been only one attempt to raise GR-S prices. Goodrich-Gulf tried it in mid-1956. It raised its delivered price on GR-S from 24.1¢ a lb. to 25¢. It held it there for a month. No other producer joined it. So Goodrich-Gulf retracted. Since then, there has been no change from the 23¢ price (plus 1.1¢ a lb. added for transportation).

On this price, most producers make between 4¢ and 5¢ a lb., excluding sales costs. It costs them between 18¢ and 19¢ to make a pound of GR-S. They can make it at the 18¢ cost by turning out what's called oil-extended GR-S. In the last stage of production, they add low-cost oil to the synthetic mixture. The oil goes in varying amounts, from 10% to 40%—depending on the end product. Whatever the percentage, it naturally extends the amount of rubber that comes from the end of the production line.

But even with these costs, some of the manufacturers are talking about price increases. Says one: "In the last couple of years, we've had two labor cost increases, and we've absorbed these." Still, most in the industry agree a price rise isn't likely before the end of the year, and probably not until next year.

• **Life in Natural**—In any such move, they would need to keep a check on natural rubber prices. For all the competition it has been getting, natural rubber is far from dead. B. F. Goodrich, deep in the synthetic industry, began planting rubber trees on a 600,000-acre plantation in Liberia.

Says Goodrich's Pres. J. Ward Keener: "No rubber comes cheaper than that produced on an efficient plantation. It can be produced for as little as 12¢ a lb."

Yet, though natural rubber prices may fall below those of synthetic in the next few years, synthetic is still certain to keep booming. Use of rubber in the world, as in the U. S., is growing fast. And at the same time, any increase in consumption of natural rubber in, say, the next three years would have to come from trees planted between 1951 and 1953. This projected extra natural rubber supply simply isn't enough to meet the estimates of growing demand.

• **Export Market**—Governments from Britain to Japan realized this, and in half a dozen countries synthetic rubber plants are being built or planned. Until now, the U. S. manufacturers have met most foreign countries' needs for synthetic rubber. Last year's exports of GR-S ran to 150,000 tons. This year, exports probably will be nearer 250,000 tons, but, after 1960 they'll begin to dwindle as foreign plants come on stream. This, the U. S. industry guesses, will be no loss—for U. S. consumption

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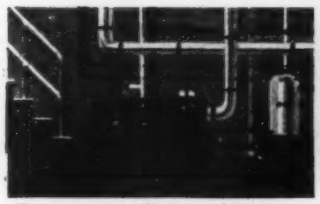

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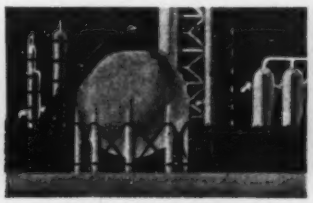

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The American Market: a Look Ahead

The woods are full of Marathon miracles

You *know* that wood, pulp and paper come from trees. But do you know *why* many other products start from timber?

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What next from wood residue? Marathon already knows some of the answers to that question. For the same plan-ahead philosophy that made Marathon the leading supplier of food packaging also applies to its manufacture of wonder chemicals from wood.

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will still be bounding along and all available plant capacity should be needed.

IV. In the Cards

So, to the industry, it seems sure that the present pause in expansion is only temporary. World rubber consumption will be about 3-million tons this year (U.S. consumption, 1.5-million tons). By 1960, it will rise to 3.5-million tons (U.S. share, 1.7-million tons). Yet, by 1960, it's unlikely there'll be more than about 1.9-million tons of natural rubber available. By 1965, the call for synthetic rubber should be even greater. The world will want 4.5-million tons of rubber that year (the U.S., 2-million tons) and though new rubber plantations will be producing by then it's unlikely they will be able to meet more than half the extra demand.

Barring a general economic decline, synthetic rubber manufacturers expect they'll have to start spending heavily for expansion by 1960. Equipment costs by then are sure to be higher than they are now, and that's one reason the manufacturers are talking about a GR-S price rise.

The GR-S plants they bought from the government cost them from $125 to $150 per ton of capacity. Those built in the last few years have cost about $250 per ton of capacity.

• **New Fields**—Demand, plus research, may even give new spirit to the industry's ugly duckling—butyl rubber. Standard Oil Co. (N. J.) developed this in the late 1930s. Postwar, its prime market was in auto inner tubes. Since the advent of tubeless tires in 1954, the bottom has fallen out of the butyl business. Jersey Standard's two subsidiaries, Humble Oil & Refining Co. and Esso Standard Oil Co., bought the government's two butyl plants in 1955, and since then have been searching for new uses for their product. They say they have found it by developing a tire easily made from butyl, which formerly has been difficult to vulcanize and to mix with other types of rubber.

Less likely to gain full production status, barring a war or a major Far Eastern upheaval, are the "synthetic natural" types of rubber. These cannot be made in a GR-S plant, and industry estimates are that in the present state of the art plants for synthetic natural rubber production would cost close to $500 a ton of capacity.

Whatever happens in the next few years to those more highly specialized products, general-purpose synthetic rubber seems sure to gain. When it does, the rubber companies, which have drawn so much of their postwar stability from the new industry, are sure to work hard to hold—and increase—their pre-eminence in the business. END

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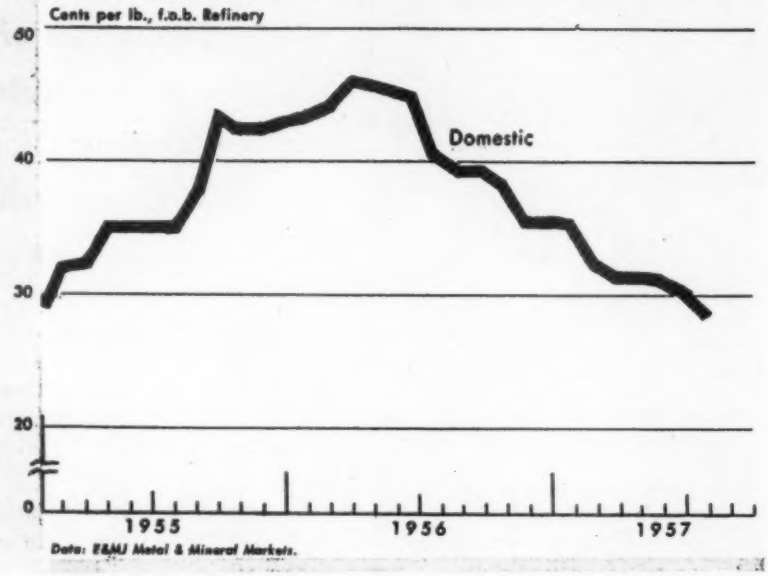
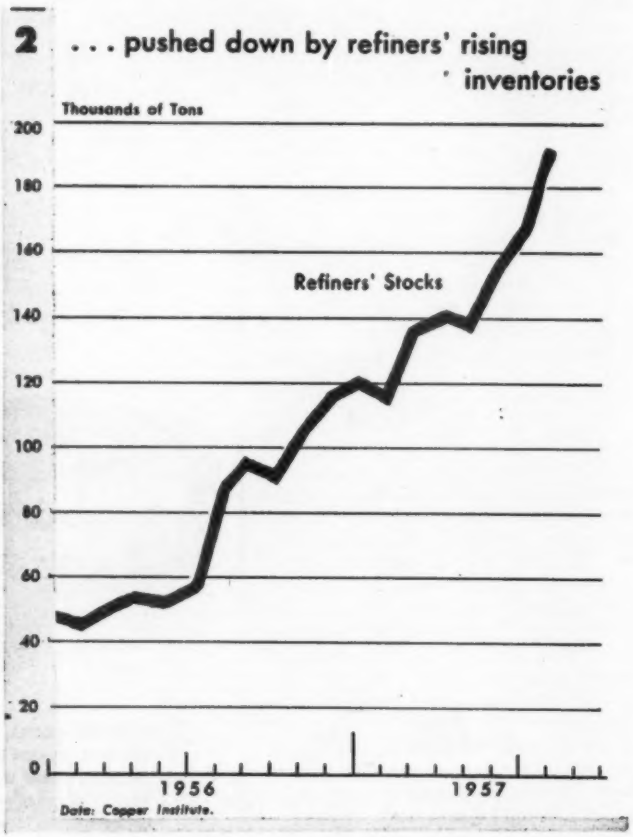
Why the Red Metal

1 **Copper prices climbed to a 46¢-a-lb. peak in mid-1956 —but they have been plummeting ever since . . .**

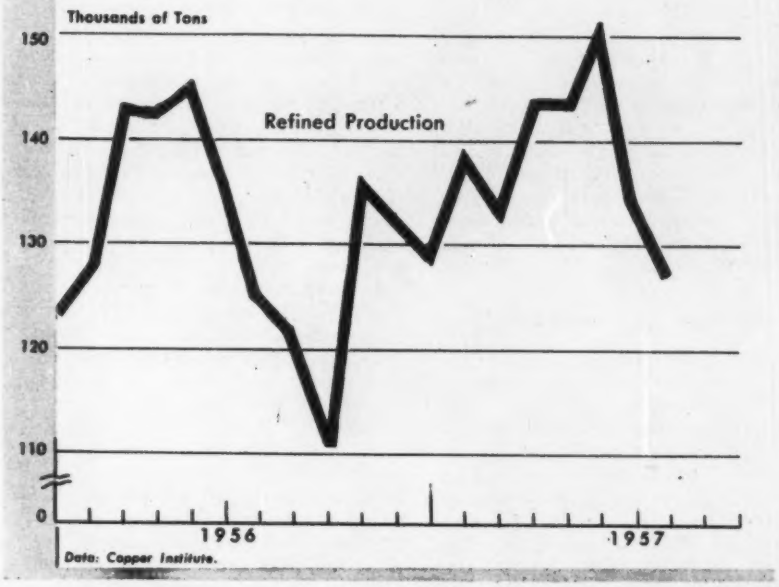


2 **. . . pushed down by refiners' rising inventories**



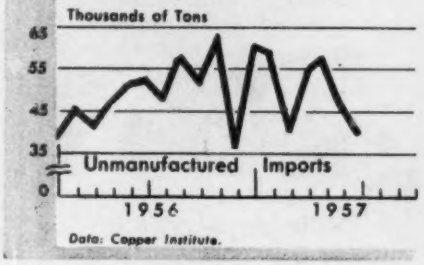
Has Been So Weak So Long

3 Behind this is an upsurge in production of refined copper . . .

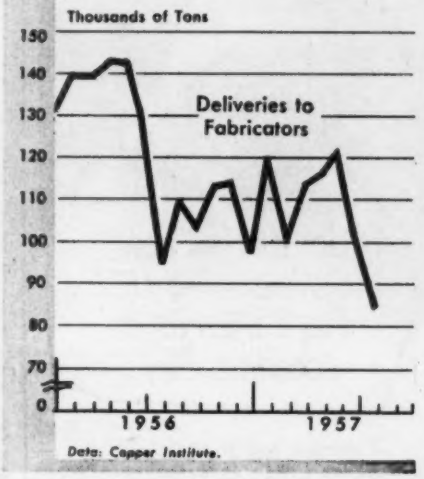


4 . . . in the face of

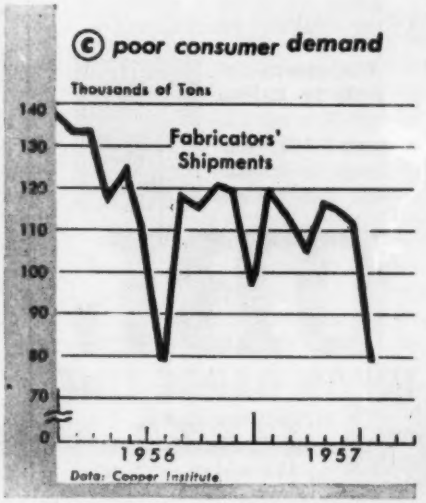
ⓐ increased import flow



ⓑ decreasing deliveries to fabricators



ⓒ poor consumer demand



JUST A LITTLE over a year ago, copper prices were kicking up their heels (top chart) and heading for the moon. The metal was selling at 46¢ a lb. at U.S. producers' prices; on the more volatile London Metal Exchange, it ran up to 55¢ (BW—Mar.24'56,p70).

Then, suddenly, the moon seemed very far away. The market softened and prices began to skid. Since then, producers' prices have plummeted to 27¢ a lb.; custom smelters, who deal in secondary copper and scrap, are selling at 26½¢; and LME at 2¢ below that. And additional cuts could come at any time.

To understand why the price toboggan was so steep, you have to delve into the complexities of an industry operating in an intricate price muddle.

I. Hand-to-Mouth Buying

At the start of 1955, copper was in short supply. The shortage grew worse under the impact of a series of strikes. In January, walkouts at the Rhodesian mines caused a loss of 40,000 tons. In July, a domestic stoppage cut off an additional 80,000 tons. In December, Chilean mines were struck with a resultant loss of another 30,000 tons.

In the midst of this short supply (U.S. annual copper consumption was 1.5-million tons), industrial demand was making unprecedented strides, reaching for a record-breaking Gross National Product of $391.7-billion. Western Europe, too, was experiencing a record business boom. In short order, hungry copper consumers forced the red metal's price skyward.

High prices, of course, brought out usually stifled high-cost production. Despite the loss of 150,000 tons through labor strife, world production hit all-time records.

• **Turning Point**—Just at that point, demand turned soggy, and prices faltered. But the steady stream of supply has not abated. U.S. refined output, for example, now is running at an annual rate of 1.7-million tons, compared with last year's total 1.6-million tons production. Yet demand, at best, is fickle, and deliveries to fabricators and their shipments are running on a par—an average 108,000 tons a month. Last year, fabricators took an average of 122,000 tons a month, and shipped out about 117,000 tons a month. Big consumers, such as the utility, automobile, and construction industries, are living off inventories. In fact, new orders booked by fabricators in July called for only 69,359 tons of copper; this was the lowest amount since August, 1949, when 68,884 tons were needed.

• **Import Flow**—Aggravating the metal's surplus domestically has been an upsurge in imports, small enough when

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compared to Korean War days, but just enough to upend a soft market. Unmanufactured imports (ores, concentrates, blister, refined ingots, cakes, and billets) total some 350,000 tons for the first seven months of 1957. That's about 75,000 tons ahead of the comparable period last year. This figure doesn't include stepped-up imports of semi-finished forms, such as wires, rods, sheets, and tubes, at prices substantially below these same items turned out by U.S. fabricators.

Many metal men blame coppers' present doldrums on the failure to curb refinery output in the face of these factors. But that's only half the story: The other half is the nature of copper, itself, pressured by the internal structure of the copper industry and pounded at by labor and political difficulties overseas.

II. Foreign Competition

The copper industry breaks down into three basic categories: producers, custom smelters, and fabricators. Each plays an important, and different, role in determining prices.

On the surface, the domestic copper industry appears "concentrated" enough to make you expect prices as orderly as those of steel and aluminum. The largest producers, Kennecott Copper Corp., Phelps Dodge Corp., and Anaconda Co., are vertically integrated, combining mining, smelting, refining, fabricating, and marketing interests. In 1956, these majors mined over three-fourths of the 1,133,000 tons of copper ore mined in the U.S. Yet the majors, although they do set prices to a large extent in the short-term run, are unable to stave off price cycles, much as it is in their best interest to do so.

There are many factors involved:

The U.S. can't depend entirely on its own resources for copper. It must import one-third of its needs. Thus, domestic producers can't isolate themselves from important happenings elsewhere; rather, they must compete with foreign producers operating within a vastly more varied price framework.

There are three major foreign prices: the London Metal Exchange, Rhodesian Selection Trust, Ltd., and Union Miniere du Haut Katanga, the big Belgian Congo producer. Each is influenced by the other, but each finds different price levels.

LME, for example, fluctuates daily. RST, on the other hand, has a so-called fixed-price policy, which actually changes when market conditions warrant. RST's price last week was 26¼¢ a lb., equivalent to 26¢ a lb. laid down in New York. Katanga also has a fixed price policy that unbends at whim; the Belgian producer sold copper at 26.8¢ a lb. last week. Copper at these prices —2¢ below U.S. prices—is competing with copper here, keeping prices down.

• **London Peg**—However, it's the copper bought and sold on the London Metal Exchange that interests domestic producers most. This is somewhat of a paradox, since LME had handled a relatively small proportion of the metal since the U.S. ceased to be a major exporter of nonferrous metals. Even so, it is still the best barometer of the copper climate. According to Jean Vuillequez, vice-president of American Metal Co., Ltd., the importance of the LME price lies in the difference between U.S. producers' prices and LME levels. "The outstanding difference is that the U.S. price represents the price at which producers are sellers of copper, whereas the LME price fluctuates in accordance with supply and demand," Vuillequez says.

In addition to these foreign pressures, copper producers here react to price actions with different strategems. Both Anaconda and Kennecott, for example, have heavy investments in Chilean copper, and they must placate Chilean officials in all their price dealings: Chile depends upon copper for the bulk of its export dollars, to say nothing of internal taxes, and any loss of these dollars would drastically hurt the nation's economy. So these companies try to hold off price cuts as long as possible.

Phelps Dodge has no foreign mines, but it has some of the lowest-cost mines in the industry. A few of these produce copper for about 10¢ or less to a lb. Anaconda, on the other hand, is basically a high-cost producer, especially now that it has depleted some of its richer deposits. Some of its mines operate on a 28¢-to-a-lb. ratio. "Yet both get the same price for their copper," points out one industry man. "whether it cost them 10¢ to the lb. or 28¢ to the lb. So why shouldn't Phelps Dodge lead every price break that comes along? It will still be making lots of money at lower than today's prices."

Roy G. Glover, chairman of Anaconda, cites this conflict between low-cost and high-cost producers as fundamental to the industry. Low-cost producers, he claims, are so concerned with competition from other metals that they advocate prices in line with their operations without regard to other segments of the industry. High-cost producers, on the other hand, he says, see the drying up of their production with inadequate prices.

III. Domestic Pressures

The domestic producers are pressured from still another intra-industry source —the custom smelter, one of the main factors in copper's year-long descent.

Three custom smelters dominate the

New classroom units were designed by C. K. Allen, Staff Architect, City of San Bernardino School District. Contractors and developers of the panel construction used: Calcor Steel Building Division of The Calcor Corp., Los Angeles.

Needed: more schools in a hurry ... what San Bernardino did about it

The struggle to keep up with the booming school-age population has school authorities all across the nation a little out of breath. In solving this problem San Bernardino, Calif. (population: 85,000), turned to a simplified construction that provided new classrooms quickly and at low cost.

Key elements in the construction are panels, formed in large part from Bethlehem's Bethcon galvanized steel sheets. They are easily and quickly secured to the framework of light structural steel, most of which is supplied by Bethlehem's Pacific Coast plants. What's more, the buildings are portable. They can be lifted from their foundations and moved to new residential areas, should future shifts in population require it.

San Bernardino used this same construction for thirty-eight new school units last year, and followed it again this year, building a new elementary school and additions to ten existing schools at a decided saving in cost over usual types of construction—and in the short space of three months. As a result, when San Bernardino children trooped back to school in September, 2100 pupils who would otherwise have been forced to accept "doubling-up," or even "tripling-up," had desks and classrooms all their own.

The steel panels forming the sides and roofs of the new units are among the many hundreds of products being made from Bethcon galvanized sheets. The Bethcon zinc coating adheres so tightly to the steel base that it doesn't crack or peel off even when a Bethcon sheet is bent sharply back on itself.

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scene, American Smelting & Refining Co., American Metal Co., Ltd., and International Minerals & Metals Corp. The trio's refining capacity is about half of U.S. refining capacity, and it smelts about 41% of all U.S. ore. These custom smelters not only buy ores, reclaimed copper, and scrap and sell refined metal in the world market for their own account, but they do a chunk of business in "toll"—processing ores for others at a fee. In addition, they act as sales agents for many producers, and often own huge blocks of stock in mining concerns.

• **Bigger Share**—Normally, custom smelters account for about 15% of total industry sales to fabricators. This year the figure is closer to 20% as custom smelters, able to offer cut-rate prices on a declining market, get a bigger share of the pie. Here's how they work:

As opposed to the primary producer whose costs are relatively stable, the custom smelter buys ore, secondary copper, or scrap, without being sure of what the price of refined metal will be when his intake is sold. To avoid possible loss, he tries to balance his daily intake of ores with his sales of refined metal.

He makes his profit on a treatment charge. For instance, a custom smelter might buy metal-containing ore at 30¢ a lb. He would charge a 2½¢-a-lb. refining charge, perhaps about 1¢ more for transportation if he had to ship that ore a great distance. Then the smelter would tack on a 5¢ to 6¢ treatment charge—actually a penalty fee for processing impurities in the ore. The result would be about a 2¢ or 3¢ a lb. profit—in good times.

Actually, there's no such thing as a custom smelter price. It's not rigid, may not last for a day, perhaps not even an hour. Each smelter sells at the price he thinks he can get. As such, the custom smelter roughly parallels the London Metal Exchange as a barometer.

• **Smelters' Problem**—What happens to the custom smelter when prices go down? The smelters, one industry specialist says, have to buy copper at higher prices than they can sell it. One reason for this is that smelters often work up long-term contracts with mining outfits, buying their ore at higher prices than current demand justifies.

Also, smelters must keep their intake fairly constant. They have to keep their smelters operating, or see production costs climb. So, rather than build up stocks and gamble with future prices, smelters keep undercutting producers' prices to keep their metal flowing. That's what has happened in the past few months. Smelters have constantly driven a wedge between producers' prices and their own, and, as producers have tried to match these prices to hold their positions, copper prices continued down.

"It's a crime," says one producer, "to let a guy with a little amount of copper set a low price. We set our prices—and try not to bow to custom smelters. But when prices are falling, it's practically impossible to sit tight."

IV. Fabricators Clamp Down

It's impossible to sit tight because of the pressures from fabricators, who take refined metal and turn it into wire, rods, sheets, and tubes for consumers. It's common sense for fabricators to push for lower refined prices in today's weak market, especially if they must compete with lower-price imports.

There are about 31 major fabricators in the U.S., including those associated with the big copper companies, such as Chase Brass & Copper Co. (Kennecott), American Brass Co. (Anaconda), and Phelps Dodge Copper Products Corp. (Phelps Dodge). But there are many independent fabricators who turn out sizable batches of fabricated items, including Bridgeport Brass Co., Revere Copper & Brass, Inc. (AS&R owns 36% of the stock), General Cable Corp. (AS&R owns 42% of the stock), J. A. Roebling's Sons Corp., and Triangle Wire & Cable Co., Inc.

• **Near Rock Bottom**—Most fabricators, of course, have more than one source of supply. But for the independent fabricators (who do about 25% of the business), the option settles down to dealing with either the integrated refiners or the custom smelters. In making his choice, he must keep an eye peeled on low-priced imports.

These independents supposedly are near rock bottom in their inventories, and this mode of operation in today's soft market is a touchy one.

A fabricator, for example, might get a better price on metal by buying from a custom smelter, but he risks falling out of favor with the big refiner—and might get left out when the lean years come. "If you're only interested in low prices, no one is going to take care of you," comments one integrated refiner.

• **Quotas**—In lean years, the integrated refiners set a quota for each fabricator. These quotas are based on the fabricator's historical "take." If the "take" is low in times of oversupply—demonstrating that the fabricator has switched allegiances—then the quota will be low. If the fabricator then turned to the custom smelters, he would have to pay a stiff price. For in lean years, custom smelters pay high prices for foreign ores and high prices for scrap, and they pass these costs on to their buyers.

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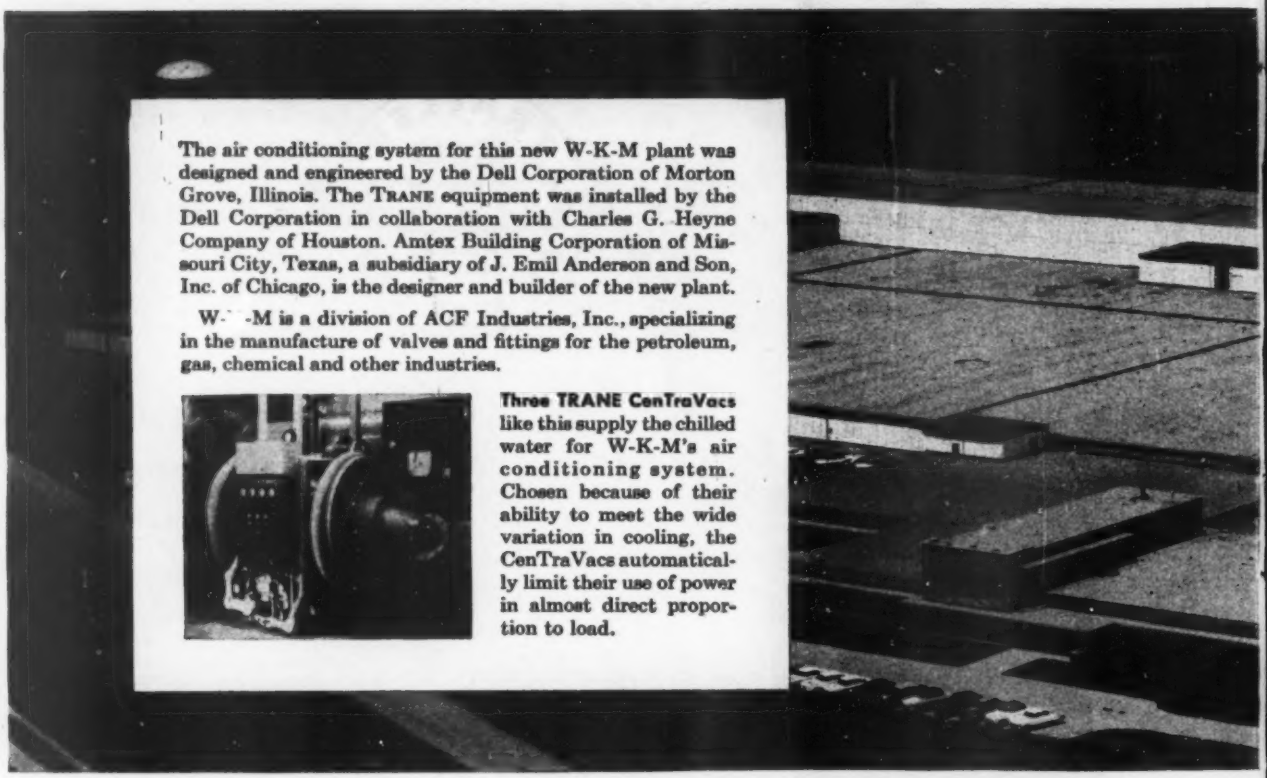

The air conditioning system for this new W-K-M plant was designed and engineered by the Dell Corporation of Morton Grove, Illinois. The TRANE equipment was installed by the Dell Corporation in collaboration with Charles G. Heyne Company of Houston. Amtex Building Corporation of Missouri City, Texas, a subsidiary of J. Emil Anderson and Son, Inc. of Chicago, is the designer and builder of the new plant.

W-[illegible]-M is a division of ACF Industries, Inc., specializing in the manufacture of valves and fittings for the petroleum, gas, chemical and other industries.

Three TRANE CenTraVacs like this supply the chilled water for W-K-M's air conditioning system. Chosen because of their ability to meet the wide variation in cooling, the CenTraVacs automatically limit their use of power in almost direct proportion to load.

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Here's a new, modern factory building that's *comfort air conditioned* for "peak efficiency weather" in every season of the year! It's the Houston, Texas plant of W-K-M division of ACF Industries, Incorporated. This almost windowless, single-story factory occupies 12 acres in a 75-acre site . . . almost every square foot air conditioned for ideal working conditions.

To provide this "high production climate," W-K-M installed a 2,250-ton TRANE air conditioning system that uses chilled water in summer, hot water in winter—both circulated through the same piping system. The TRANE equipment is regulated by an electronic control system to maintain efficient summer or winter temperature in every area of the plant. Quiet, efficient and economical, the

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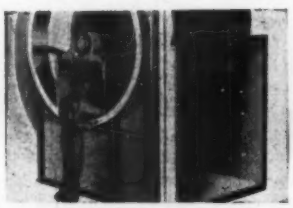

AIR CONDITIONING
For year 'round heating and cooling systems, TRANE Coils and TRANE Fans (above) temper and circulate air for comfort or process climates.

HEATING
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*Factory is comfort air conditioned throughout except for a special heat treating area amounting to about 1.6% of the total plant area.

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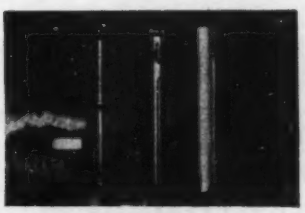

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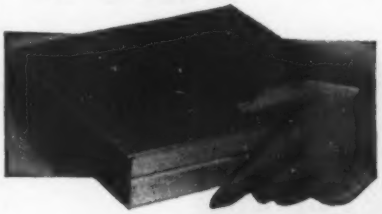

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ignores low custom smelter prices now, he runs the risk of being priced right out of his own market.

• **Optimism**—Although the trend of copper's bleak statistics—and their import—isn't expected to change radically in the near future, some metals men wax optimistically. This is how they reason:

• Recent signs indicate that high-cost producers are slowing down mine production. Miami Copper Co. is curtailing mine output by 20%. Anaconda says production at its Yerington mine in Nevada will be cut 16%, and Inspiration Copper Co. announced a cutback of 500 tons per month. If these slowdowns lead to lessened refiners' output, prices could rebound.

• Although government stockpiling has tailed off, some new pump-priming may be on the way. Several companies have contracts with the government containing "put" clauses. These companies extended capacity at the government's request, and their contracts enable them to pass on surplus copper to the government when copper prices reach a set point. It's reported this set point, for several of the producers, is about 29¢ a lb., just over today's prices. It's usually not the practice of producers to quote prices in fractions of a cent. So the drop to 28½¢ seems to bear out the contention that the government is ready to accept copper.

• "The days of cheap copper are gone," says Anaconda's Glover. He echoes Charles R. Cox, president of Kennecott, who says: "Copper is worth more than 32¢ a lb." The premise here is that U.S. production with costs at 29¢ a lb. and higher now represents 22.6% of total output, and that any price less than 3¢ above those costs can't be sustained.

Long-range, the trend toward higher copper prices appears real. One factor is that the once-rich Western deposits are depleting steadily. Kennecott, for example, reports that at all its divisions last year the grade of ore mined was lower than in 1955. And the cost of bringing out this lower grade ore and processing it is substantially higher than mining and processing readily accessible rich ore.

Moreover, copper slowly is losing its tag as steel's co-worker. In years past, copper prided itself on its historical relationship with steel; about 1.4 lb. of copper was used with every 100 lb. of steel. But this ratio is widening as aluminum—and other new metals—take over some of copper's traditional markets and improved metallurgy stretches out Steel's uses. More and more, one industry man says, copper will become a specialty metal and less of a "workhorse" metal. As such, it could command headier prices in the future. END

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Why Sixth

Getting supplies on the run from floating bases keeps it cruising Mediterranean as stabilizer in volatile area, shield for U.S. Allies, club over our enemies.

FLEET COMMANDER Vice Adm. C. R. Brown (left) heads U.S. and NATO naval might in Mediterranean, with Rear Adm. E. E. Yeomans (right) as NATO deputy.

GOOD WILL is a prime mission of Sixth Fleet; last year its ships visited 100 Mediterranean ports. Shown here is U.S.S. Salem, flagship, and sailors in Venice.

DOWN THROUGH 2,000 years of history, the blue Mediterranean has been the Helen of oceans, lusted after and struggled over by the great nations which surged to power around its shores. The outcome of these battles, Greeks vs. Persians, Romans vs. Carthaginians, and on through the centuries, has profoundly affected world history.

Today, while the adversaries have changed, the role of the Mediterranean has not. It is still the connecting link between Europe, Africa, and Asia. It flanks the most volatile region in the world—the Arab World—where Russia and the Western powers are squared off and where a small spark just might trigger off the atomic holocaust of World War III.

• **Threat**—The danger of this spark has increased with Russia's more aggressive stance. The new Russian influence in Syria poses today's most immediate threat to the West. Turkey, NATO's military bulwark in the Middle East, now faces Russia to the north and a bristling Syria on the other side.

So far, Russia has used only subversion to gain a Middle East foothold, but there's always the chance it could turn to armed aggression tomorrow. At this point, the U.S. is pledged, through the Eisenhower Doctrine, to use armed force if necessary to stop such a Communist move.

• **Answer**—The might that can enforce the words of the doctrine is the U.S. Sixth Fleet (pictures), the symbol of American power in the Mediterranean.

The Sixth Fleet has become the West's great gray stabilizer in this 1-million sq. mi. area, its gloved hand of diplomacy as well as its big stick. The fleet's mission is complex: to protect U.S. citizens and property, to control this strategic sea, to guard NATO's southern flank, to provide air protection for our Allies in the area, and to be able, if war should come, to send its planes winging into the Russian heartland with atom bombs.

• **Tryouts**—The fleet has already had a chance to flex its muscles. When Israel invaded Egypt, the fleet's ships patrolled offshore while American nationals were evacuated from Gaza and Alexandria. If there had been any

Fleet Never Needs a Base

NAVAL MIGHT of Sixth Fleet's 50 ships, 180 planes, 25,000 sailors, 1,800 Marines patrols and controls the Mediterranean.

KEY WEAPON in fleet's arsenal is Douglas A3D (foreground) which can carry an atom bomb.

REPLENISHMENT UNDER WAY is key to fleet's mobility; it has no Mediterranean bases. Here a ship prepares to supply carrier and cruiser at same time.

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problem getting U.S. citizens out, the fleet's commander, Vice Adm. C. R. Brown, was prepared to send in the Marines.

Last May, when King Hussein of Jordan cracked down on Communists in his country and there was the chance of Syrian or Egyptian intervention, the Sixth Fleet raced to Lebanon, Jordan's neighbor. Brown sent 1,000 Marines ashore "on liberty" in Beirut—a clear warning to Hussein's enemies in Jordan and elsewhere that the U.S. was prepared to act.

• **Strong Stick**—Next time, Brown may have to use his big stick rather than his gloved hand. And Adm. Brown's stick is the most powerful fleet in this part of the world. Late this month his fleet will have the chance to show off its power when it—along with other U.S., and NATO units—will engage in Exercise Deepwater, a massive amphibious assault operation on Saros Bay in western Turkey.

I. What's Behind the Punch

These exercises will reemphasize the point that while the role of seapower remains unchanged, the fleet's striking power and logistic support have been revolutionized.

• **Task Force**—The fleet's key weapon is Task Force 60, built around two fast carriers, the U.S.S. Franklin D. Roosevelt and U.S.S. Randolph (Sixth Fleet ships rotate on duty every four months). They are bigger, faster, and more heavily protected than anything the Navy had during World War II.

The carriers' stable of planes includes a preponderance of jets, among them the Douglas A3D Skywarrior, a 600 mi.-an-hour plane that can carry an atom bomb 1,400 mi. to key Russian cities and plants.

The fleet's two cruisers, including the U. S. S. Salem, Brown's flagship, are the largest in the world, with about the punch of pocket battleships.

Defending the carriers—and helping provide the radar eyes and sonar ears for the fleet—are 20 destroyers, four minelayers, and two submarines. These units also provide the bulk of the fleet's anti-submarine protection. When needed, Brown can add a special submarine hunter-killer group to his fleet.

• **Marines and Missiles**—A second task force with the fleet is made up of the Marines and the amphibious and service ships needed to put them ashore. Although small in numbers, the Marines have great fire power, which will be beefed up even more when they get new atomic artillery.

The fleet also has a missile punch—the Regulus ship-to-shore weapon carried by the carriers and cruisers, the Sidewinder air-to-air missile, and the

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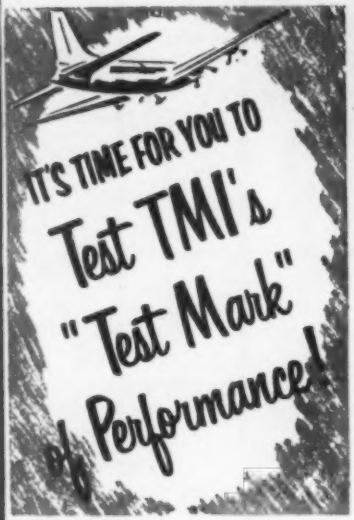

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STAFF MEETINGS for Sixth Fleet are held at 8 a.m. daily in wardroom of flagship. Vice Adm. Brown has a staff of 32, keeps them "lean and pared down," working hard.

Terrier surface-to-air missile carried by the guided missile cruisers.

• **Floating Bases**—Serving as pipeline for the fleet's Sunday punch are the service force ships—the tankers, ammunition, provision, and supply ships that bring the fighting ships the beans, bullets, and black oil they must have to operate.

These service force ships have an unusual function—they provide floating bases for the fleet. For this fleet has no land supply bases in the Mediterranean. It is the only fleet in the world that can continuously maintain operations without local bases. The fleet's home supply bases are 3,000 mi. away at Norfolk, Va., and Bayonne, N. J.

There are good reasons why the Sixth Fleet has no Mediterranean bases; (1) there is no telling when a base in a friendly country might be overrun, (2) land bases are easy to pinpoint, a prime target for enemy bombers, (3) a base requires personnel, housing, equipment, and means double-handling of all cargo before it gets to the ultimate users. But more important, bases curb the fleet's freedom and flexibility.

• **Service on the Run**—The miracle of logistics, which enables ships to be months at sea, is "under-way replenishment," a technique developed during World War II and Korea, and now perfected by the Sixth Fleet.

The key to under-way replenishment is the art of fueling and provisioning ships while they are on the move at sea. Service force ships constantly shuttle back and forth between the fleet and home bases bringing out the hundreds of thousands of supply items the ships need. They also bring stocks for the reserve ammunition, supply, and tanker ships.

Transferring supplies at sea is a delicate operation. Expert seamanship is necessary, for example, for a tanker to fuel simultaneously a cruiser and a carrier while all three are making 12 knots. Expert planning and timing is also necessary so the fleet's ships can rendezvous on time and spend the minimum time in provisioning.

Provisions and ammunition usually move by cargo net from one ship to another. A pressing problem is developing equipment to cut down on manpower and time needed. To do the job, most ships now have roller-skate wheel conveyers to move cargoes quickly from one end of the ship to another, and telescopic aluminum chutes and vertical pocket conveyers (lifts) to speed heavy supplies up and down. This system has been carried to the point where one provision ship recently transferred 1,000 tons of frozen food to 29 ships in a 15-hour period. In case of attack, provisioning can be broken off in a matter of minutes, and the ships dispersed.

• **Paring Inventories**—To make sure that each ship carries only those items needed, but enough of them to operate at sea for long stretches, Navy supply officers continually pare allowance (required inventory) lists to the bone. Special fleet supply research teams comb through ships' storerooms weeding out dead items and those in oversupply.

Critical spare parts—as well as mail, and personnel—are flown to the fleet.

II. Busy Helmsman

The man who controls this billion-dollar armada and its mobile bases is a soft-spoken 57-year-old Alabamian whose nickname is "Cat" and who flies his three-star flag from a ship whose name means "Peace."

His job has been described as "sitting

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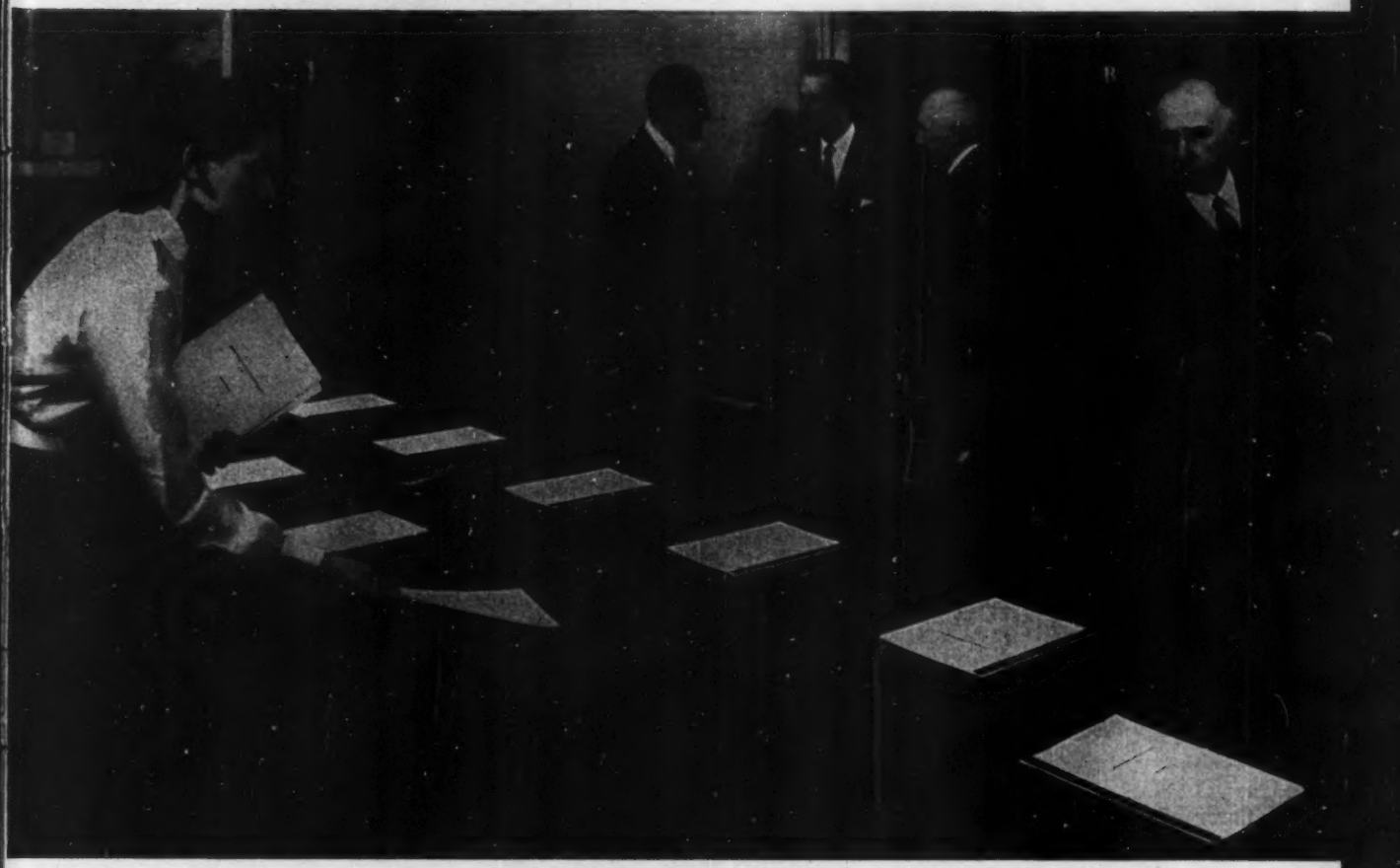

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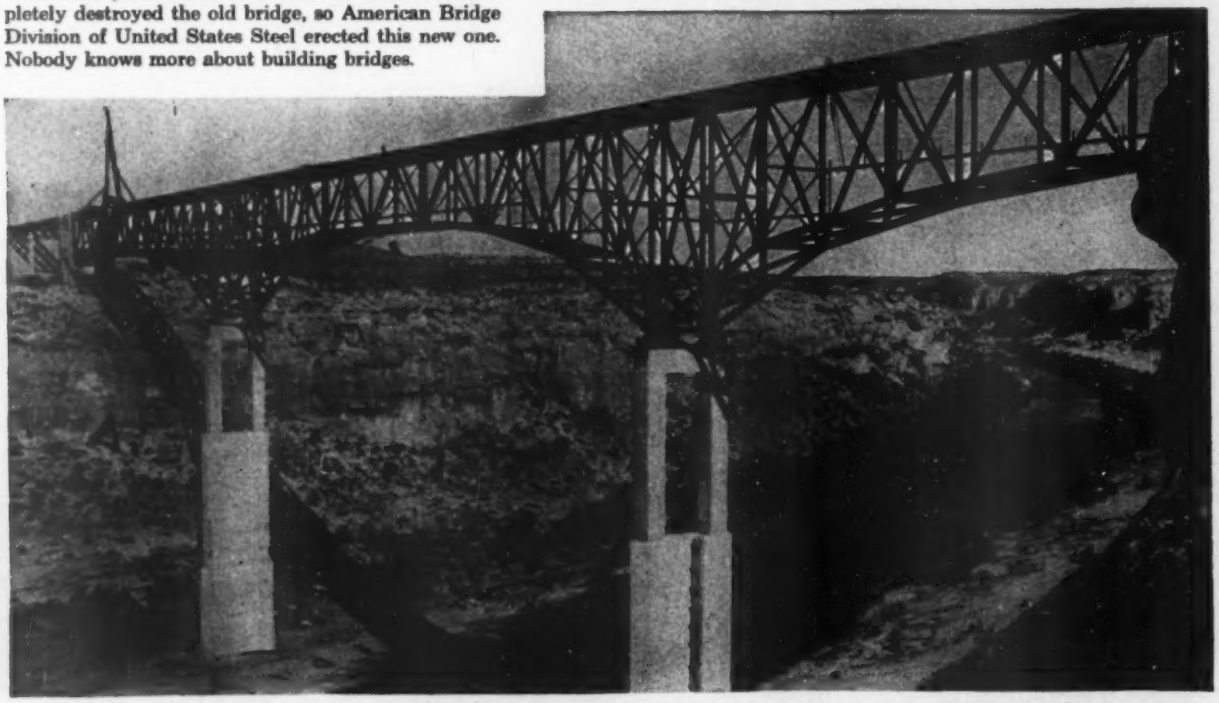
On The Famous Pecos River. This bridge soars across the Pecos River near Comstock, Texas. The country is still rough and forbidding, as it was when Wild West yarns made it famous. A flash flood completely destroyed the old bridge, so American Bridge Division of United States Steel erected this new one. Nobody knows more about building bridges.



This Tanker Is Full Of Gasoline. The tank trailer was loaded with 4,700 gallons of volatile gasoline when it overturned, skidded 15 feet, bounced off an abutment and snapped a light pole. The trailer was caved in, crushed and wrinkled, but not a drop of gasoline was spilled. Why? The tanker was made from USS COR-TEN Steel, a special high-strength steel that is 1½ times as strong as standard carbon steel. Incidentally, the tanker was repaired and the owner expects to get eight more years of service out of it!

Observatory Skeleton. This is what an astronomical observatory looks like *before* the skin is applied. The dome is on rollers, and a small five-horsepower motor rotates it to any part of the sky. The shutters (through which the telescope looks) are opened with a one-horsepower motor. Naturally, all the important parts are made from steel because no other metal is so strong, so stable, or so easy to fabricate.

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USS

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on the top of a volcano." It is one of the toughest and at the same time most coveted jobs in the Navy.

Brown has had this post since August, 1956. In addition to his U.S. hat, he also wears the hat of naval commander for NATO's Striking Force South.

• **Seagoing Staff**—His job as a fleet commander is varied. More than half the time the admiral and his ships are at sea, sharpening up their fighting skills, learning teamwork, practicing a vast array of combat exercises. Much of the fleet's day-to-day operations and planning, Brown entrusts to his staff. He has a staff of 32 officers, and he likes to keep them "lean and pared down." He also likes to keep them at sea.

One unusual member of his staff is a civilian, Dr. R. E. Beatty, who holds a Ph.D. from Massachusetts Institute of Technology. Dr. Beatty's job is to conduct operations research work on the fleet's exercises, evaluate the various anti-submarine and air attack methods, and see if he can find ways of improving them.

• **No Paper Admiral**—But while his staff irons out many of the daily problems, Adm. Brown makes a point to get out and see for himself the condition of his ships—and be seen. "I don't want to be known as somebody who sits behind a door and keeps the papers coming out," he explains.

His surprise inspections may involve swinging over to another ship by boatswain's ladder, on a line strung between the ships. Or he may drop on a submarine's deck via a sling lowered from the belly of a helicopter.

• **Calls and Conferences**—Ashore, his days are usually occupied in making calls on foreign officials, and receiving their calls in return, and in official entertaining. His flagship's guest book reads like an international Who's Who, including royalty—the Shah of Iran, King and Queen of Greece—foreign government officials, Pentagon brass, junketing congressmen, and a swarm of journalists.

Often he has to fly to London, Paris, and Rome to meet with Navy and NATO brass, or to Naples to talk with his NATO staff. A good part of his time in port is also spent consulting with U.S. ambassadors to the countries that ring the Mediterranean, or with foreign ambassadors who often use him as a sounding board for their ideas, or a foil against which they can blow off steam about U.S. policies.

• **Good Will Missionary**—He must also be alert to the fleet's peaceful mission of showing the flag and winning friends for the U.S. Last year, the fleet's ships made 1,426 "good will" visits, to some 100 Mediterranean seaports.

His sailors have proven men of good will, not by the $10-million they spend ashore, but by their good conduct (best in the fleet), by the baseball and soccer games they play with local teams, their band concerts, and the food and gifts they distribute to the poor on Christmas and Thanksgiving, and in dozens of other ways.

When the town of Volos, Greece, was rocked by an earthquake, the U.S.S. Wood rushed in food, first aid facilities, and technical assistance. In port, Navy helicopters constantly patrol to make sure that ships' garbage or oil is not polluting the water.

III. Ready for the Big "If"

But while enhancing the good will reputation of the U.S. is a responsibility, most of the admiral's worries and planning revolve around what his fleet can do "when the balloon goes up."

• **Growing Red Navy**—One growing concern is Russia's burgeoning naval strength.

Russia is now the world's No. 2 seapower. Since 1945 it has built more cruisers, destroyers, and submarines than the rest of the world combined.

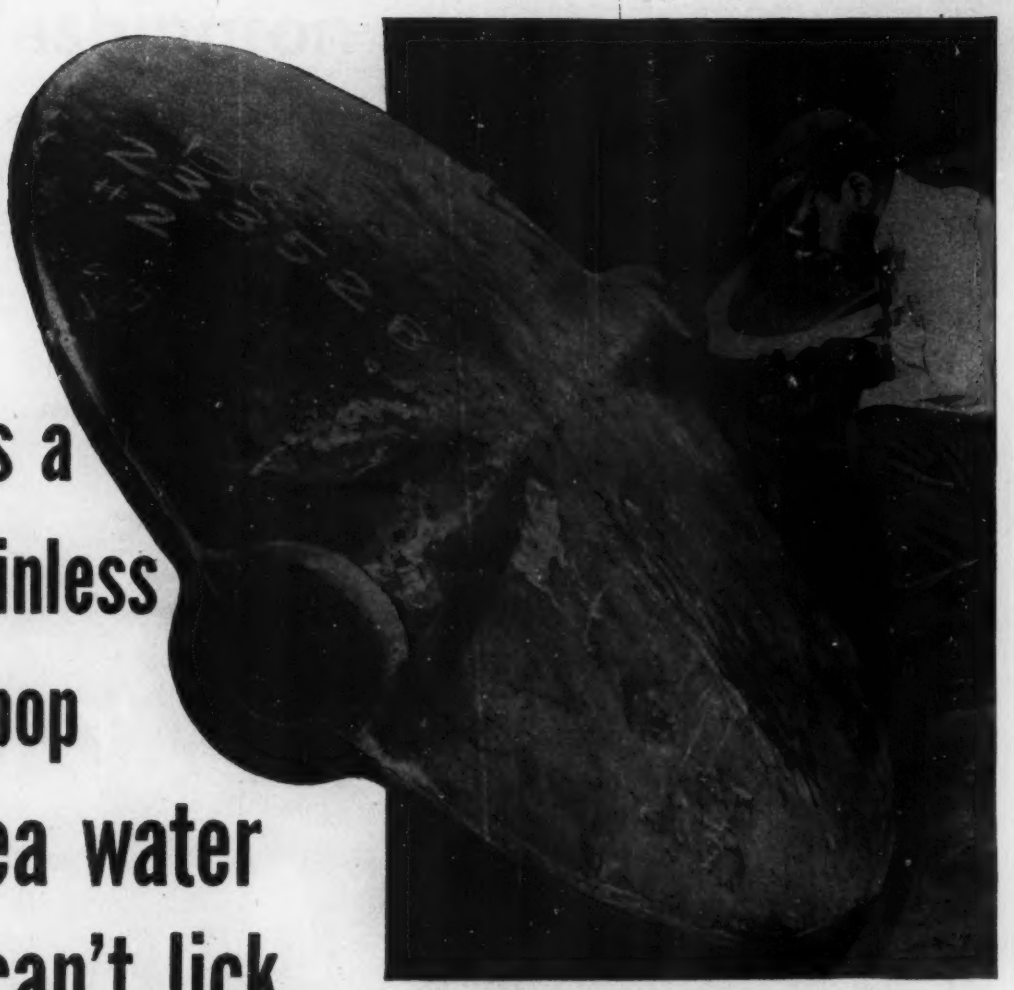
And lately Russian seapower has moved into the Mediterranean. Two Russian subs now fly the Egyptian ensign, and in Communist Albania World War II German submarine pens are being expanded. Just this week a sleek Russian cruiser and destroyer entered the Mediterranean from the Black Sea to pay a courtesy call on Albania. And a Russian naval squadron is headed for the Mediterranean from the Baltic.

• **Worry No. 1**—With the possibility of an atomic attack always in his mind, Russian naval power represents the lesser of Brown's headaches. One answer to the possibility is to keep his ships always dispersed. At sea, his fleet is spread through a thousand square miles of water—a far cry from the task force formations of World War II. Another safeguard is never to permit more than three or four ships to be in one port at one time.

Dispersing the fleet makes its ships harder for enemy bombers to find. Besides that, the bombers, in order to clobber his carriers, would have to come down low to make sure of their targets. This gives the fleet the protection of its antiaircraft guns, its missiles and fighter planes.

• **Surviving to Attack**—Even so, Adm. Brown is the first to admit that in case of war, his first few hours at sea will be pretty lonely. "If I can survive the first blows—and I think I can—I will be able to do a lot of hitting myself. Wars are won by remnants and the Sixth Fleet is going to be a pretty sturdy remnant." END

Here's a stainless lollipop sea water can't lick



This large (48" dia., 1701 lbs.) and unusual stainless casting was fabricated by Allegheny Ludlum's Buffalo, N.Y. foundry. It is scheduled for service under the most severe operating conditions, functioning as a wafer valve disc at 25 psi pressure in sea water. Since long life and tight closing are essential in this application, corrosion resistant Type 304 Allegheny Stainless was specified.

Some unusual techniques were employed in the fabrication of this casting. Although the entire valve disc was cast as a single piece, its sides are hollow, with a skin only ¼" thick. The center shaft was cast solid at the same time the side wings were cored, permitting the single piece, seamless part desired.

If you have a casting problem, or *any* problem that involves corrosion resistance, long life, resistance to wear and abrasion, call the Allegheny Ludlum Sales Office nearest you. An A-L Sales Engineer is ready to put his skills and those of the A-L Technical Staff promptly at your disposal, to serve your requirements from the largest and most complete line of stainless products on the market.

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WSW 8668

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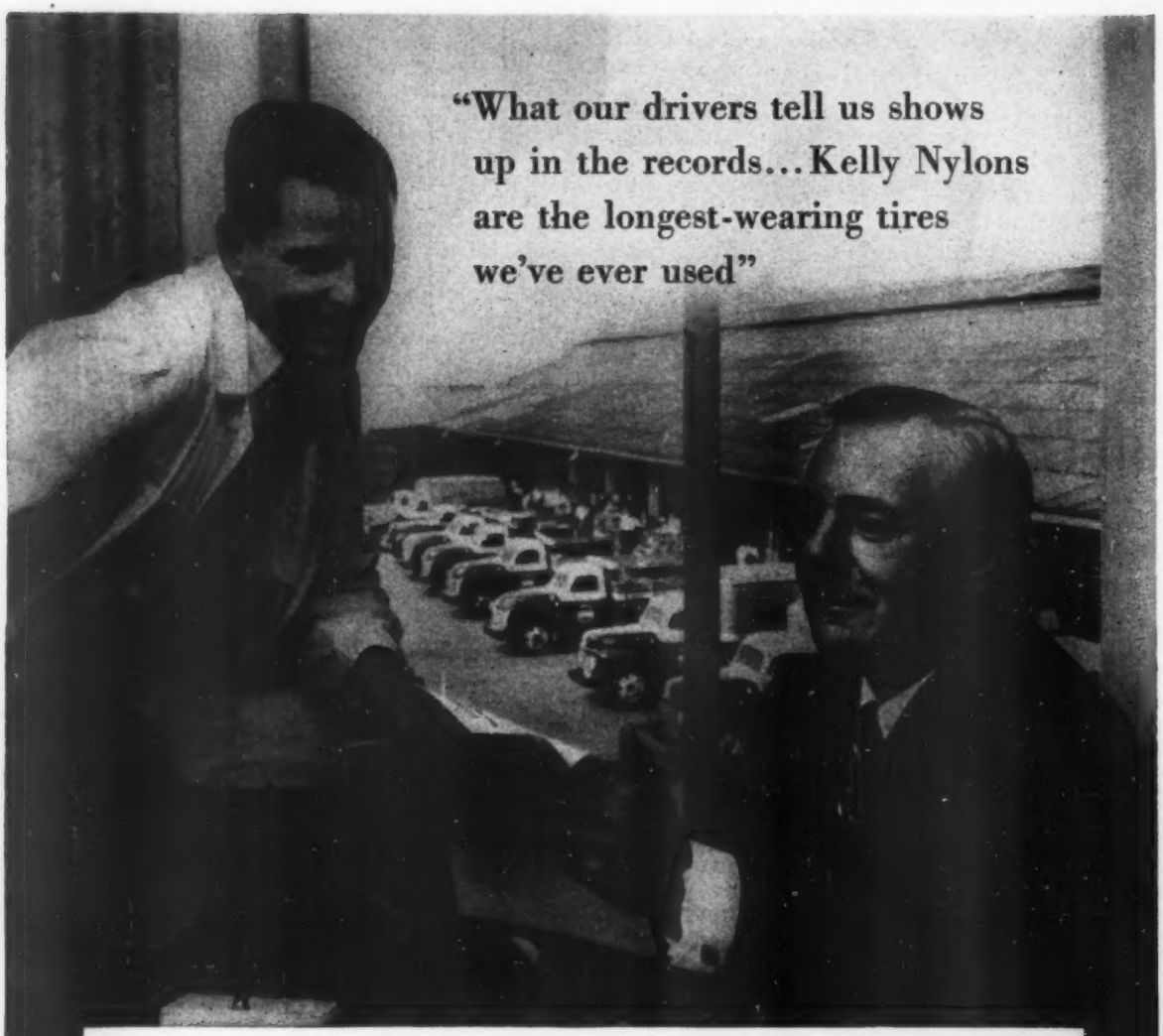

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• • •

AEC Pushes Assigned Study Of British-Type Power Reactor

The Atomic Energy Commission is letting no cobwebs grow on its study of the possibilities of a British-type nuclear power reactor—a task assigned it by Congress.

U.S. companies have been given a Sept. 23 deadline for engineering proposals for a 40,000-kw. natural uranium, gas-cooled plant. AEC itself has till next Apr. 1 to report back to Congress on the feasibility and cost of the project.

The commission has also issued its first license to a company to operate a nuclear power plant: General Electric's 5,000-kw. boiling water reactor at Pleasonton, Calif. GE is using the plant to gain data for the 180,000-kw. unit to be built later for the Commonwealth Edison group in Chicago; Pacific Gas & Electric takes the Pleasonton power.

It's the second small reactor producing power in California. In July, AEC's experimental sodium reactor, built by North American Aviation, began producing power for Southern California Edison.

The first U.S. commercial-sized reactor is expected to start operating later this year at Shippingport, Pa.

• • •

Year's Delay Hits U.S. Hopes Of Easing International Patent Law

U.S. manufacturers hoping for an early easing of the more hampering patent policies they face in some countries have been disappointed temporarily. The International Convention for the protection of Industrial Property—set for next month in Lisbon—has been postponed for a full year at the insistence of some European countries, including West Germany and France, which claim they need more time for preparation.

The postponement comes after U.S. companies along with the Patent Office and the State Dept. had spent six months preparing amendments that the U.S. will seek.

Many of these issues are discussed in the report on "The International Patent System and Foreign Policy," by a Senate Judiciary subcommittee, which is available from the Government Printing Office for 25¢.

• • •

Army Contractors Latest to Feel Bite of Defense Economy Drive

The Defense Dept.'s economy drive this week was being felt in new areas of business. This time, it is contractors for the Army who are taking the worst beating:

• A cutback has been ordered on production of the "mechanical mule," an 830-lb., ground-hugging vehicle that can carry 1,000-lb. loads cross-country. Kaiser Industries' Willys Div. is the contractor.

• Production of the new Nike-Hercules ground-to-air guided missile will be stretched out considerably; Western Electric and Douglas Aircraft are the principal contractors. The stretchout is likely to delay for almost a year the construction of bases for the Nike-Hercules, whose range is more than double the 25 miles of the Nike-Ajax.

In all, the Army estimates its various cutbacks and stretchouts will mean layoffs for about 10,000 production workers.

Meanwhile, the Army has had to reshape its combat forces to fit its 50,000-man share of the 100,000 men who must be lopped from the armed services by January.

One more infantry division will be deactivated, bringing the active total down to 16, one fewer than specified in Pres. Eisenhower's original 1958 budget. The number of 5,000-man missile commands has been reduced to four from six, and 18 obsolete antiaircraft battalions have been eliminated—to be replaced by Nike units. The missile commands are a new type of unit, being set up for long-range artillery support of infantry, be it U.S. or NATO.

• • •

Batch of Charges by House Democrats Studied by Airlines and CAB Officials

Airline officials and bureaucrats of the Civil Aeronautics Board this week were poring over a 350-page report containing a bundle of charges against them. The report, by a House antitrust subcommittee, wraps together charges by Democrats that airline competition is being suppressed, and the Republicans' defense of both the industry and the agency that regulates it.

The Democrats want the Justice Dept. to study possible violations by the Air Transport Assn.—trade association of the airlines—and by Pan American Airways. They also demand that CAB approve more specific routes for non-sked lines. Generally, they want Congress to drop what they call its "protectionist bias."

The Air Transport Assn. says that nothing in the report or the subcommittee hearings supports the charges or the recommendations of the Democrats.

• • •

Probe of Administered Prices Gets Added Funds in Senate

The Senate Antitrust & Monopoly subcommittee got a last minute budget boost of $50,000—for a total of $275,000—to pay for its pending investigation of administered prices for the rest of the year.

Chmn. Estes Kefauver (D-Tenn.) early next month will resume hearings on concentration and how prices are set in the steel industry. Bethlehem Steel officials will be the next witnesses, with U.S. Steel and the United Steelworkers already on the record. Some consumers of steel will also be heard, before Kefauver moves on to his next industrial target—farm machinery.

BUSINESS ABROAD

Japan Upgrades Its Old Label

Nippon is banking on quality rather than cheapness of exports to win its way back into the markets of the West.

MANDARIN ORANGES, product of Japan, lure passers-by into food show at Japan Trade Center in New York. Trade center helps importers, stages travelling exhibits.

IN PREWAR DAYS, that old label "made in Japan" usually stood for shoddy merchandise, cheap products, trinkets worth little more than souvenirs. But in 1957, as the pictures above show, American importers have altogether a different picture of what they can buy in Nippon. Today, Japanese exporters—egged on by their government—are putting the accent on quality goods sold at competitive world-prices.

This movement toward better products in Japan hasn't come about by accident. Since World War II, U.S. Occupation economists and Japanese planners themselves have repeatedly said that the country's salvation lay in pushing exports. Their success has been phenomenal—from $820-million in 1950 to $2.5-billion in 1956.

• **Not Enough**—The economists have also said that just boosting exports of Japan's traditional products—cheap tex-

TRADE center director Mikisaburo Taniguichi presides over the full-range displays of Japanese exports.

MERCHANDISE for future shows strong contrasts with the often junky quality of Japanese goods, that were exported prewar.

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Only the men are flying

The fact is, men beat birds at their own game. Even when our feathered friends are grounded, we're aloft; flying ever higher, faster, safer, further. And, unbelievable as it may seem, more accurately.

Among the companies spearheading man's conquest of the sky are nine of the GPE Group. Their contributions are basic—technological bench marks such as—

• the only compass systems that *always* know where north is, whatever the plane does, wherever it goes: Kearfott's stable-platform gyro compasses;

• the only simulators to meet the need for on-the-ground training in supersonic flight: famous Link jet simulators;

• the only airborne navigation systems in operational use guiding planes automatically and with unprecedented accuracy — anywhere, in any weather: GPL Doppler autonavigators.

Inertial navigation, missile guidance, photoscience, and certain nuclear power applications, are some other phases of aviation in which GPE companies are deeply and jointly involved. And while many of the products of the GPE companies — particularly in the field of aviation—serve defense needs today, the important scientific advances they embody are "plowshares" for tomorrow.

Aviation is but one industry in which GPE companies work. A brochure describing the activities of the group is available. More than a dozen basic industries are served by products resulting from GPE coordinated technologies and resources.

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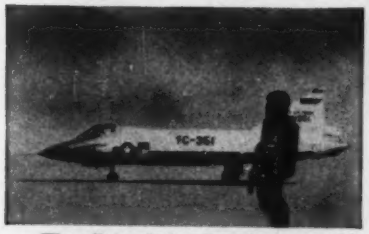
man aloft



The pilot – before he set eyes on this jet, before he set hand to the actual controls – had already "flown" it. He learned how, on the ground, in a Link F-102 Simulator . . . one of more than a million fliers who have logged "Link time." Millions more will.

Military flight and fliers benefit immeasurably from the systems and equipments developed by GPL, Kearfott, Librascope and the other GPE companies working in aviation. Once these classified products are released for civilian use, everyone will enjoy their benefits.

The coordinated resources of the companies of the GPE Group, so effective in anticipating and meeting the needs of flight, serve with equal effectiveness other industries such as:

Automatic Controls and Instrumentation
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Marine
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Steel, Mining, Transportation

For brochure describing the work of the GPE Group, write to: GENERAL PRECISION EQUIPMENT CORPORATION, 92 Gold Street, New York 38, New York.

RELIGIOUS figures model the latest trappings in Japanese bandages.

tiles, paper goods, and gimcracks—isn't enough. With its vast population (now pushing past the 90-million mark), shortage of raw materials, and loss of captive markets on the Asian mainland, Japan's only hope is to produce higher quality goods with their higher markup, their generally higher labor content, and their better competitive position against European and North American manufacturers.

It's probably too soon to evaluate how successful the Japanese have been. There are some obvious success stories—cameras, chinaware, sewing machines, binoculars, transistor radios, woolen fabrics, high-styled silks, plywood, motor scooters, electric fans, and shipbuilding. A large part of the credit for pushing these products in foreign markets goes to the Japanese External Trade Recovery Organization (Jetro).

• **Price vs. Quality**—The Japanese are still a long way from their goal. If quality has become an increasing factor in selling Japanese goods abroad, in only a few cases is it the determining element. Worldwide prosperity which has skyrocketed demand—particularly for the 23% of all Japanese exports sold in the U.S.—has been a paramount factor in the trade success.

In most cases, price is probably more important than quality in determining sales in the U.S. In some cases, the American distributor is more responsible than the Japanese exporter for low prices, insisting that this is the only factor that will sell Japanese goods. This points out one of the great defects of Japan's whole trading system—its dependence on Japanese trading companies or American importers who have neither the ability nor the organization to exploit a product on anything but a low-cost basis.

Still, one U.S. buyer who knows the Far East suppliers and the U.S. market said this week that the movement toward upgrading the quality of Japanese exports to the U.S. only is in its earliest stages. He predicts big things just around the corner.

I. Jetro's Ancestry

Japan's increasing accent on quality merchandise is part of its postwar reappraisal of its role as a member of the free world community of nations. Before the war, Japan—with captive markets in China and Korea—didn't care whether it antagonized the West by dumping cheap, poor-quality merchandise on world markets.

Today, Tokyo realizes that it can't afford to exhibit callousness and independence in trade relations. It must depend on the good will of other countries for the markets that are its life blood. And it's from the government, itself, that the move for quality control of exports has come.

• **Jetro's Role**—It's Jetro's job to impose this philosophy on industry. Actually, the organization is private, not government. But as with so many features of Japanese trade, it's hard to tell where government leaves off and where private capital starts. In theory, Jetro is paid for half by industry, half by government. Actually, the government is now footing more than half the bill for its main offices in Tokyo (employing more than 1,000 people), its four permanent trade centers abroad (New York, San Francisco, Toronto, Cairo), and its 35 market researchers in that many cities worldwide.

Copied after Betro, the successful British foreign trade organization, Jetro sees its job as twofold—checking quality at home and spreading word of the new kind of Japanese product abroad.

Actually, Jetro only gives moral encouragement to the quality-control operations that started to take shape after the war under the U.S. occupation. Now a rigid system of semi-government organizations checks every export article.

For some items, inspection is voluntary. More and more exporters, however, are turning to one of Japan's 45 private inspection agencies to do the inspection for them. These are quasi-governmental bodies set up as trade cooperatives, such as the Japanese Fountain Pen Inspection Assn.

You can see the results of these big cooperative agencies any time you look at a Japanese-made camera. Every one exported bears the seal of the Japan Camera Inspection Institute.

• **Promotion**—To tell the job of improved products, Jetro sponsors an annual international trade fair alternately in Tokyo and Osaka. This year, the Tokyo fair generated a total trade con-

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ii-TV 500

From GPL, developers and manufacturers of the famous "150" the compact closed-circuit TV camera that produces the finest quality pictures . . . from the makers of the "152" Ruggedized the TV camera that withstands shocking vibrations, blows and extremes of temperature...comes the new, versatile *ii-TV* 500...again the finest in its class.

economical – will soon save its cost in many applications

single unit system – with controls right at the camera

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tract business of $18.7-million, including $9-million in exports. The four trade centers—particularly the Fifth Avenue Japan Trade Center in New York—are showplaces for Japanese merchandise, where potential importers can find products they might not hear about unless they journeyed to Japan. In addition, the two U.S. centers sponsor shows in their areas—one is set for Philadelphia in two weeks, others soon in Portland (Ore.), and St. Louis. Jetro also sponsors junkets by businessmen, importers, and designers to Japan.

II. What's Selling

Understanding Western taste is a problem for the Japanese producers. They are shocked at American women wearing chopsticks in their chignons, can't understand why American bathers have taken to the "happi" coat, a Japanese fisherman's garment no one but a lowly fisherman would wear in Japan.

But nobody is as happy as the Japanese exporters that Japanese things seem to be having a new vogue in the U.S. Fred Shoeman, buyer for Wiebolt Stores of Chicago and just back from a Far East trip, says most Americans don't realize how big the impact is. "Relaxed styles" such as low tables, globe lamps, parchment wall scrolls, and ornamental decorations, he says, show Japanese influence.

That's why a company like Japan Crafts Co. is finding a lucrative market for Japanese-designed ceramic fruit bowls, lamp bases, and other objects in the U.S. Japan Sword Co. can't keep up with orders for hand-carved steel steak knives, which sell for as high as $4 for a half dozen.

• **Big Sellers**—High-priced artistic products such as these constitute only a minute part of Japan's total exports to the U.S. The most conspicuous example of high-grade industrial products sold here are cameras. Nikon and Canon rank in the same category as German cameras. The two Japanese companies, thumbing their nose at tradition, sold directly to U.S. importers. They also used American public relations consultants for promotion ideas.

The two camera companies proved a point that many observers of Japanese trade have long insisted—that the traditional trading company (BW—Aug.13 '55,p62) can't do justice to anything but cheap Japanese goods.

• **Trail Blazers**—To a considerable extent, it's U.S. buyers for Japanese firms stationed in Japan who have blazed the trail. For example, young, talented Marion Tilton, representing Cohn-Hall-Marx fabrics and Baar & Beards neckwear, has taught hundreds of Japanese weavers how to make the high-grade silk items that will please American tastes and fit U.S. standards. END

Photo Savings with SPEED GRAPHICS*

"Immeasurable" Says Automatic Switch Company

One of the generator sets used for emergency lighting by the New York State Thruway. This Speed Graphic photo was taken to show the ASCO Transfer Switching mechanism in box at upper left.

Another application of ASCO electromagnetic controls. Speed Graphic photo shows two ASCO Bulk Loading valves in operation at the Jamaica Bay Oil Company, Ozone Park, N. Y. These valves provide an electrical inter-lock that prevents withdrawal until authorized by dispatcher.

Automatic Switch Company (ASCO) of Florham Park, N. J., manufactures complicated electromagnetic control devices for almost any control requirement. Its products include transfer switches, solenoid operated valves, remote control switches, electric plant controls, contactors, relays and solenoids. In combination, these products control complicated operations automatically.

In order to show its products, installations and the tie-in between its products and general installations, ASCO depends heavily on photos —Speed Graphic photos. These are used in its sales, advertising and engineering departments. Graflex Flash Units are also used.

According to Robert W. Guay, plant photographer for Automatic Switch Company, the savings in time and money due to the convenience of having its own in-plant photographic department are immeasurable.

Write on your own letterhead to Dept. BW-7, Graflex, Inc., Rochester 3, N. Y., for your copy of "How Industry Cuts Costs with In-Plant Photography."

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Most Foreign Students in U. S. . . .

Come From . . .

	Number of Students
Canada	5,379
China	3,055
Korea	2,307
India	2,144
Japan	1,870
Philippine Islands	1,714
Mexico	1,358
Iran	1,264
Greece	1,064
Colombia	963

. . . And Study

	Number of Students
Engineering	9,057
Humanities	8,524
Social Sciences	5,859
Natural & Physical Sciences	5,372
Medical Science	3,854
Business Administration	3,483
Education	1,982
Agriculture	1,447

Data for 1956-57, Institute of International Education.

U. S.-Trained Aliens Listed for Jobs

Institute of International Education is becoming an agent for companies operating abroad who want to hire American-educated technicians.

A FEW WEEKS AGO, Charles H. Frost, director of employee relations for Pfizer International, Inc., visited the New York offices of the Institute of International Education. He was looking for a list of young men in 12 countries—from Argentina to Pakistan—who had studied bacteriology, chemical engineering, and chemistry in the U. S.

Pfizer is only one of 75 U. S. companies that have asked IIE for help in recruiting U. S.-trained foreigners for work in overseas offices and plants. IIE is a nonprofit organization bedded down in the ivy-coated problems of getting foreign students to come here, and encouraging American students to go abroad.

• **"Employment Agency"**—In the past two years, IIE has become the nearest thing to an employment agency—a middleman for helping companies, and also universities and government agencies, locate foreigners who have studied here. It has also kept tabs on U. S. students who have gone abroad to foreign universities.

For companies building or expanding overseas, IIE's service is invaluable. Altogether, more than 40,000 foreigners studied at U. S. schools last year. The chart (above) shows the 10 leading countries sending students here, and the major fields of study. Most of the students return to their own countries—and thus become job candidates for U. S. companies looking for bright young men or women to staff their overseas plants.

• **Specialized Job**—It's not so difficult for a company to find college graduates in many countries—for instance, West Germany or India or Brazil. But to find young men familiar with U. S. business methods and attitudes is a real problem. You can see this easily in the fact that more and more companies regularly pay the bill for foreign employees to visit the U. S. for extensive periods of study—in company training programs or at U. S. universities.

In addition, practically all companies today try to staff overseas plants with nationals from the country where the plants are located. This stems partly from the closer familiarity with local customs and methods that nationals can bring to bear in solving day-to-day business problems. But it also comes from the fact that U. S. companies get along better with foreign countries when they employ nationals for top staff jobs as well as for jobs down the line.

Take these examples: Creole Petroleum Corp. constantly looks for Venezuelans educated in the U. S. who would like to work for Creole. W. R. Grace & Co. is always on the lookout for Peruvians and other Latin Americans with a U. S. background in chemistry and business administration.

It works the other way, too. Courtaulds (Alabama), Inc., subsidiary of the British textile company, likes to recruit Americans who have studied chemistry or physics in Britain and West Germany.

• **Punch-Card Operation**—Now these companies—and many others—are leaning heavily on IIE to scout the field for likely job candidates. IIE has set up what it calls a Central Index of Educational Exchangees. This is a machine punch-card system that lists over 200,000 foreigners who have studied here for over 10 weeks and some 25,000 Americans who have studied abroad. The listing covers primarily the post-war period—but goes back, with less accuracy, to the years since 1919. Information on each listed person includes sex, age, occupation, schooling, nationality, and address.

A company needing help contacts IIE, describes what types of people it needs, gets IIE's estimate of what's available and the cost of preparing the names, then orders a report made.

For instance, in March of this year Standard Oil Co. (N. J.) wanted a list of students from Peru, Colombia, and Venezuela now studying medicine, nursing, and sanitary engineering in the U. S. IIE came up with a detailed list of 62 Colombians, 33 Peruvians, and 37 Venezuelans. It cost Standard only $35—exactly what it cost IIE to pay its staff and run the card-index machine.

• **Drawbacks**—IIE's system has two drawbacks. Addresses aren't always up-to-date—and this isn't an easy problem to solve, what with names going back many years and people moving around frequently. Also, the listings don't tell whether a man or woman is looking for a job. But in a month or so, IIE will begin a job survey of previously listed foreigners and foreigners starting school here for the fall term.

• **Origin**—The index system is a natural outgrowth of IIE's traditional work in the educational field. It was set up in 1919 by Nicholas Murray Butler, Elihu Root, and Stephen Duggan to help promote international understanding. Since then, it has become a central clearinghouse on education. Its staff of 250 men and women, with headquarters in the converted Gould Vanderbilt mansion on New York's Fifth Avenue (and five branch offices), keeps track of the comings and goings of U. S. and foreign students. It also administers—and frequently promotes—international scholarship programs. Its $1.5-million income comes in from the U. S. government (one-third), from foundations (one-third), and from companies, universities, individuals, and other private sources.

When Kenneth Holland became IIE's president in 1950, one of his first moves was to start setting up the index-card system. IIE had already accumulated—in an informal way—a large file of names.

Holland himself had seen the usefulness for a well-organized name file years earlier when he had headed up the educational division of the State Dept.'s Office of Inter-American Affairs. With a $125,000 grant from the Ford Foundation, Holland put the new system on an operating basis a year and a half ago. END

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The telephone that made America only a minute wide is still in its infancy.

Even now the telephone of tomorrow is taking shape! In General Telephone Laboratories, men of imagination are translating scientific dreams into realities that will open an exciting new world of communications.

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In Business Abroad

French Flout Austerity Warnings, Go on Nationwide Holiday Spree

Despite grim government talk about austerity, France last week looked like a nation that was having the time of its life. Even the author of recent pronouncements on belt-tightening—Finance Minister Felix Gaillard—couldn't resist sneaking off for a brief vacation to a resort near Bordeaux (picture). There he spent six days in a rented villa called Clair de Lune, forgetting economic troubles and following a rigorous schedule of tennis and water skiing. Meanwhile, millions of vacationers—most of whom had been away a month—were streaming into Paris.

As usual, accurate statistics from the French government weren't available. But tourist officials estimated that more Frenchmen were on vacation this year than ever before. SNCF, the state railway, sagged under the strain of carrying fun-seekers from one end of France to the other. Real estate agents reported "remarkable" increases in demand for rented, furnished rooms in resort areas. Some 3-million vacationers were campers—many of them relishing a three-week paid vacation as decreed by the government.

One sign of the "austerity" was the fine press notices handed the manager of the Biarritz Casino for keeping gambling going despite a recent fire that ruined almost all the building.

• • •

French May Help Chinese Reds Build Yellow River Power Plant

Still another French economic mission left this week for Peking, the Chinese Communist capital. The mission is led by Sen. Henri Rocherau, chairman of the French upper body's economic affairs committee. **Rocherau's job: to study with Chinese how French technicians might help out in Communist China's Five-Year Plan.** Along with Rocherau are going representatives of French mining interests, the government-owned electricity utility Electricite de France, the French railways, chemical companies including Pechiney and Kuhlman, and construction companies including Schneider and Alsthóm.

Rocherau led an earlier mission to Peking in 1956 and is expected to be a realistic bargainer. **Top priority will be given to Chinese Communist suggestions that the French might help with hydroelectric development on the Yellow River.** Peking tipped Edgar Faure, former French Finance Minister and Premier, on the possibility of such deals on his recent trip to the Orient.

Meanwhile, Peking has announced it will send a technical trade mission to London sometime this month. Some textile technicians are expected soon. The Chinese say they are particularly interested in industrial equipment and machinery for producing man-made fibers.

• • •

India Gives Priority to Steel In Pinch of Funds for Projects

India's Second Five-Year Plan has been cut back. Total outlay in the public sector of the plan has been put at $7.5-billion. Taking into account the inflation of costs, this means the investment target has been scaled down by one-third for government-owned projects.

A special economy unit in the cabinet has set about pruning the plan. One item that has climbed appreciably is the cost of the three steel mills that the Germans, the Russians, and the British are building. Apparently, Indian planners still hope to give these top priority.

• • •

Britain's Export Record—Poor Last Year, Improving This Year

Britain's Board of Trade tells an unhappy story of below-average expansion of exports in 1956 in a report just issued. Here are the highlights:

- **Chemical** exports rose only 5%, compared with a 10% increase worldwide.
- **Machinery** exports increased 9%—but only half the world average.
- **Textiles** fell 5% while the world average climbed 2% (mostly because of Japan's fantastic 18.7% boost in textile exports).

But not all is gloom. This year's record so far is better. In the first seven months, both auto and chemical exports have increased 12% above last year. In autos alone Britain set an all-time production record in July, with output running at the rate of 1-million cars annually.

• • •

Locomotive Builders in Three Lands Split Order One Couldn't Fill

The kind of pooling of European industry that the Common Market makes possible was demonstrated this week. The government-owned Indian railways announced an order for 50 new-type French locomotives. The railroads liked the French design, but there was one hitch: French manufacturers can't meet early delivery deadlines.

So French, Belgian, and Swiss companies have teamed up to take the business. French companies will get 40% of the order and turn the rest over to the Belgian and Swiss companies. France's state railway company, SNCF, will oversee the whole order.

General Electric says:

"On the average, only 1 out of 100 G-E Lamps will burn out during the first year of service in a single shift operation."

Harold Kilburg, electrical contractor, says:

"Out of 5,150 G-E Lamps we installed a year ago, we've had to replace only 20. That's 1 out of 250!"

MR. KILBURG (center), president of Kil-Bar Electric Co., Chicago, inspects one of the G-E Lamps that has given such excellent service. Leo Carmody (left), wholesale agent salesman, and Larry King, G-E Lamp Salesman, worked together on this installation.

YOUR *cost of light* is about 10 times the cost of the lamps. It's also the cost of the electricity they use . . . and the cost of maintaining the system. If you buy lamps with unpredictable life, you'll have lots of early burnouts which require individual replacement. But G-E Lamps have a uniform life with few early burnouts. This means you can schedule an economical group relamping program (replace all your lamps at the same time) and realize big savings in maintenance that far outweigh the little light left in the lamps. For full information on this way to improve your lighting and save money, too, write: General Electric Co., Large Lamp Dept. BW-97, Nela Park, Cleveland 12, Ohio.

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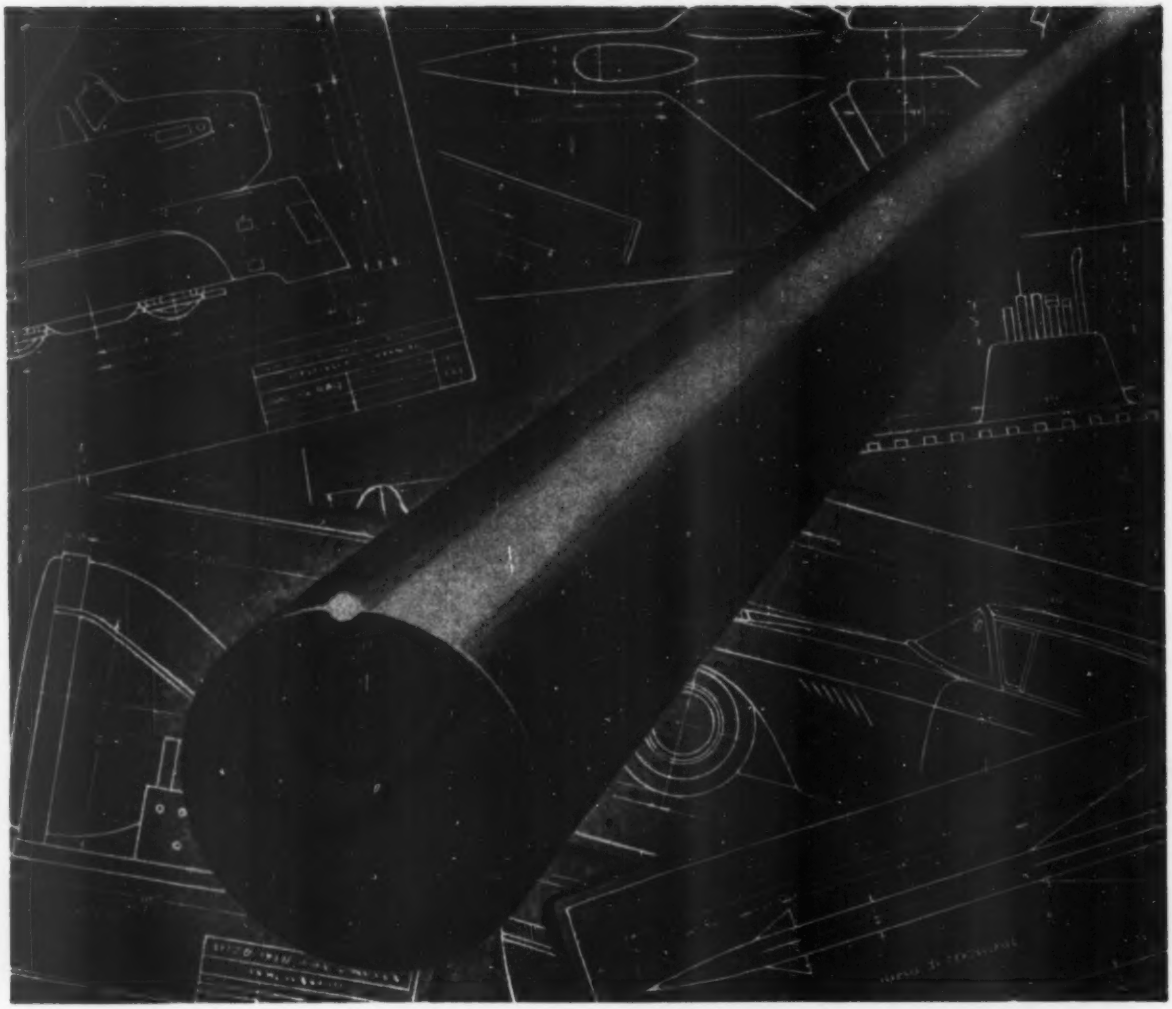

BETTER COPPER FOR BETTER PRODUCTS

One hundred pounds of copper in a 48-inch billet, when pierced and drawn, will yield as much as 800 feet of ¼-inch tubing. Tube walls may be as thin as .016 inch.

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Twenty years ago, ASARCO's metallurgists began commercial production of phosphorus de-oxidized copper billets continuously cast by an oxygen-free process. The billets have extraordinary texture . . . very high density without porosity of any sort.

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INTERNATIONAL OUTLOOK

BUSINESS WEEK
SEPT. 7, 1957

The Macmillan government is getting set to tie Britain's economy much closer to that of Western Europe.

The whole question of British-Continental relations comes up for discussion in mid-October. Then negotiations start to widen the six-nation European Economic Community (Common Market) into a large free trade area that would include most other members of OEEC (Organization for European Economic Cooperation).

There's a good chance that during the bargaining London will offer to join both the European Coal & Steel Community and Euratom. Apparently Prime Minister Macmillan favors such a course.

But a final British decision still awaits the outcome of a fierce struggle within the London government. One of the chief opponents of the "European policy" is the Atomic Energy Commission, which believes it has a ten-year lead on Western Europe and objects to sharing it. Opposition also comes from the state Coal Board, which fears that British membership in the Continental coal-steel pool would mean the end of its double pricing policy. (The Coal Board now sells coal more cheaply at home than abroad.)

Some Continental leaders, especially in France, say it's too late for Britain to get in on Europe's unification. London, they argue, missed its chance two years ago, when the British could have written their own ticket for participation.

Even so, there are strong forces on the Continent opposed to the way the Common Market is shaping up as a high-tariff and possibly high-cost economic union. These forces, which have their main strength in West Germany and the Benelux countries, favor a wider and more liberal trading system than France and Italy now want.

If London decides to go all out for European free trade, it will count on these forces to support Britain's conversion to European unity.

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Before all of these plans for European unity can get very far, answers must be found to several urgent economic problems.

There's the question of relative exchange rates among the European countries, especially the rate between the mark and the pound. This question has been behind this summer's bear raid on sterling.

Then, there's the problem of getting the French economy stabilized —something that seems beyond the ability of the present French government.

As a result of the raid on sterling, Britain's gold reserves fell by $225-million during August. The reserves are sure to fall again in September, when 75% of Britain's August deficit with the European Payments Union must be paid in gold. It's in the EPU deficit that you find most of the speculation against sterling in favor of the German mark.

So far London hasn't had to draw on the dollar credits it now has with the Export-Import Bank and the International Monetary Fund. These credits together total just over $1.2-billion. **But there's no doubt that, if necessary, the Macmillan government will use these funds to beat back the speculators.** Moreover, Britain's over-all trade position is favorable—favorable enough so

that London should have a current account surplus of about $800-million in the 12-month period between mid-1957 and mid-1958.

Even so, the mark will go on causing the pound trouble, unless Bonn either revalues its currency or changes domestic financial policy.

In a reversal of policy, big business in France has turned against Finance Minister Gaillard's price freeze (BW—Aug.31'57,p96). France's NAM, known as the "Patronat," this week blasted the government for its "arbitrary decisions."

This switch by the Patronat comes after the other important economic groups in France have all criticized the government price freeze. **Apparently the country's business leaders feared they were getting caught in a squeeze by the trade unions,** which have insisted that they will get another wage hike this fall.

—•—

U. S. foreign aid spending will be about $4.1-billion this fiscal year, or approximately what it was during fiscal 1957. That's despite deep Congressional cuts in aid appropriations. The explanation lies in the lag of one to two years between aid programing and actual spending.

Still, the Administration has lost something to the Congressional ax. It had planned to spend $4.4-billion this year. Moreover, forward programing will be hurt by the cuts made in (1) the fund earmarked for buying modern weapons for allies; (2) the President's emergency fund, much of which was earmarked for the Middle East; and (3) defense support funds used to strengthen the economies of countries like South Korea and Formosa.

—•—

U. S. auto makers aren't alarmed by the slippage in this year's passenger car exports. The figures for the first half show a drop of about 40% from exports during the first six months of 1956.

To begin with, auto executives point to the way a Canadian strike in 1956 distorted the export picture. Take Canada out of the calculation, and the drop in 1957 shipments comes to only about 15%.

Then there's this revealing, and typical, comment from a top executive in one of the Big Three: "European-made cars are making inroads in all of our markets—in this country as well as abroad. But we think the situation has leveled off now and probably will remain static for several years."

—•—

The 10th Economic Conference of the Organization of American States has given something of a push to the idea of a "common market" in Latin America. Even though no concrete progress has been made, optimists at the OAS meeting feel that this trade goal can be achieved in ten years.

Emotions are involved in such estimates, of course. They are made in part out of frustration with American policy. In the eyes of most Latin American delegates, what's wrong with Latin America is Uncle Sam's fault. This feeling would prevail regardless of what policy the U. S. adopted.

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CONRAD HILTON, Chicago, will be air conditioned by two 800 hp turbo water cooling systems. Welded piping, with TUBE-TURN fittings, is capable of carrying 5,000,000 gallons of chilled water daily. Installed by the York Division of the Borg-Warner Corporation, York, Pennsylvania.

Puts more air conditioning in available space

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Engineers and contractors serving the booming air conditioning industry rely on Tube Turns for engineering help and for prompt delivery of top-quality fittings and flanges from nearby distributors.

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MORE PIPING in a day can be fabricated and erected with perfectly uniform, easily identifiable fittings. TUBE-TURN fittings are unsurpassed for uniformity and good fit-up and are clearly marked for dimensions, schedule and material.

MORE FITTINGS on an order . . . from one source . . . saves purchasing time and red tape. The Tube Turns' line has more than 12,000 standard products. Distributor stock shown at Chicago Tube & Iron Co., Chicago, Illinois.

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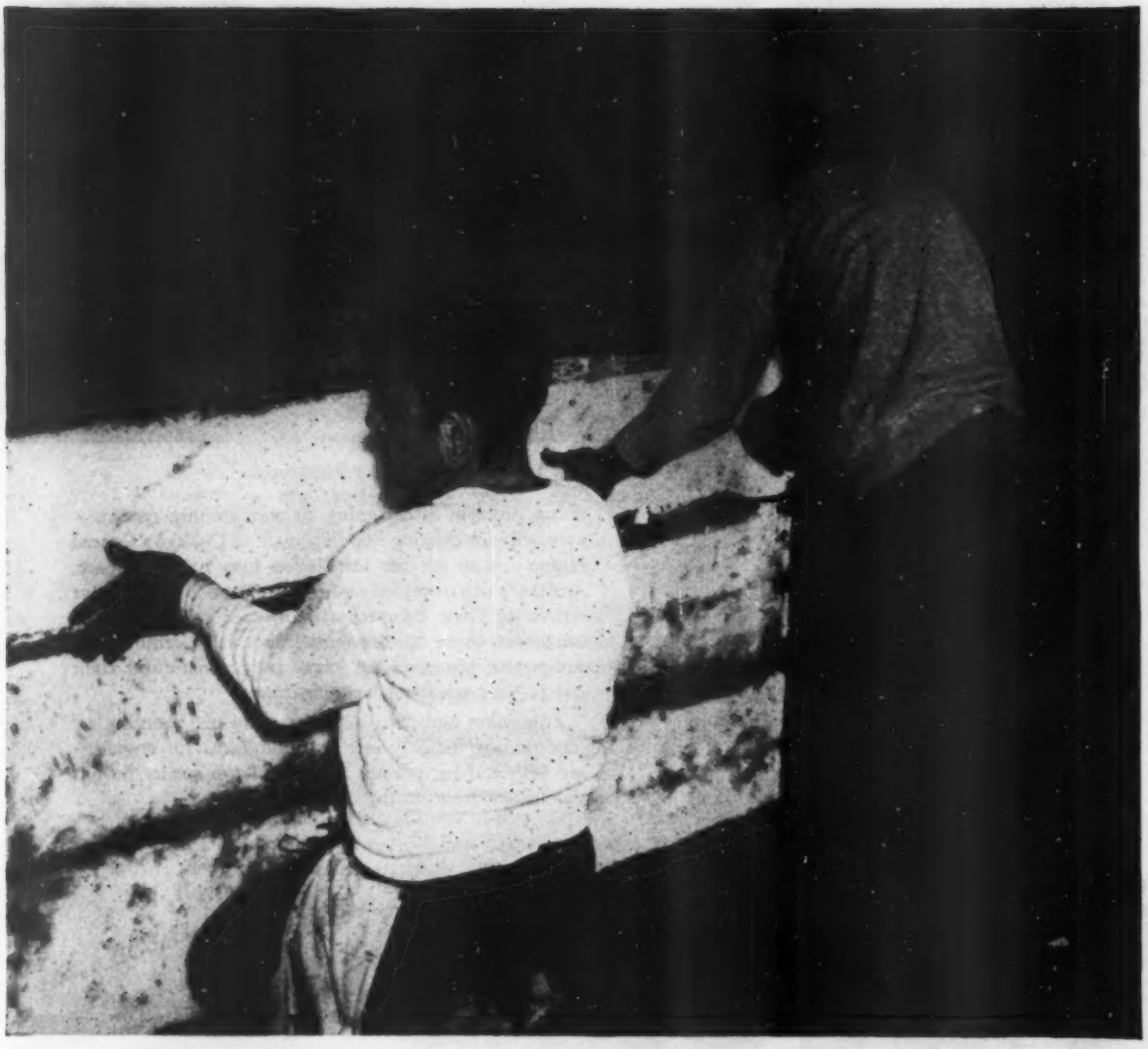


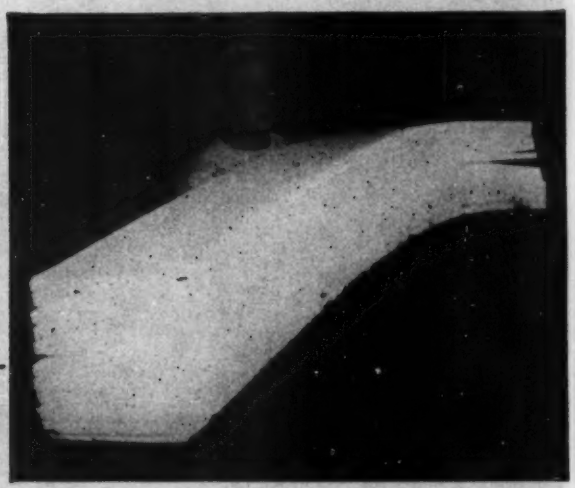
"RIGHT AT THE START," says W. H. Walrod, owner of Walrod Construction Company, Davenport, Iowa, "we save not only the expense of the wood for framing but the time needed to cut and fit the wood. We do away with the cost of installing insulation between studs and we side step the use of metal lath because the plaster keys directly to the Styrofoam* insulation.
"The wall is made up of just three components: exterior brick, Styrofoam and plaster. The use of Styrofoam permits the use of a special large-size brick (12" x 6" x 2⅔") which affords another saving in labor costs."

Styrofoam® insulation helps Iowa builder erect brick homes on frame-house budget

New masonry-insulation-plaster construction eliminates framing and lathing, reduces handling and installation costs, ups mortgage loan commitments

"CUTTING AND SHAPING Styrofoam* is almost effortless," says Mr. Walrod. "It can be scored with a knife and snapped off in any desired size."

"STYROFOAM bonds readily to the interior masonry surface. A uniform layer of cement mortar is applied by running the 1' x 9' boards through a coating trough."



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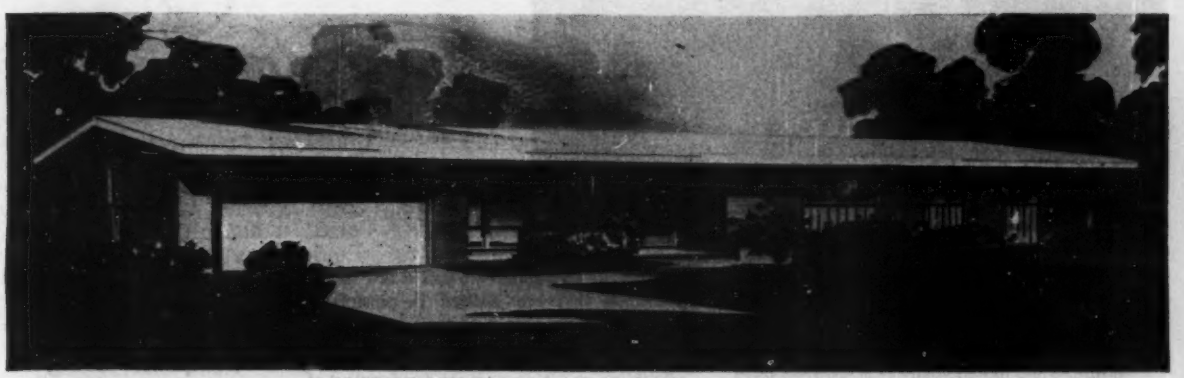

FINISHED HOME, all brick veneer and fully insulated, will cost about the same as an identical house with conventional frame construction. The use of Styrofoam (Dow expanded polystyrene) and brick increases loan commitments by mortgage companies an impressive 5%. In 1956, Walrod built several homes using masonry insulation-plaster construction.

Mr. Walrod's construction costs are available to builders upon request. Write on your letterhead to The Dow Chemical Company, Midland, Michigan, Plastics Sales Department 1737V.

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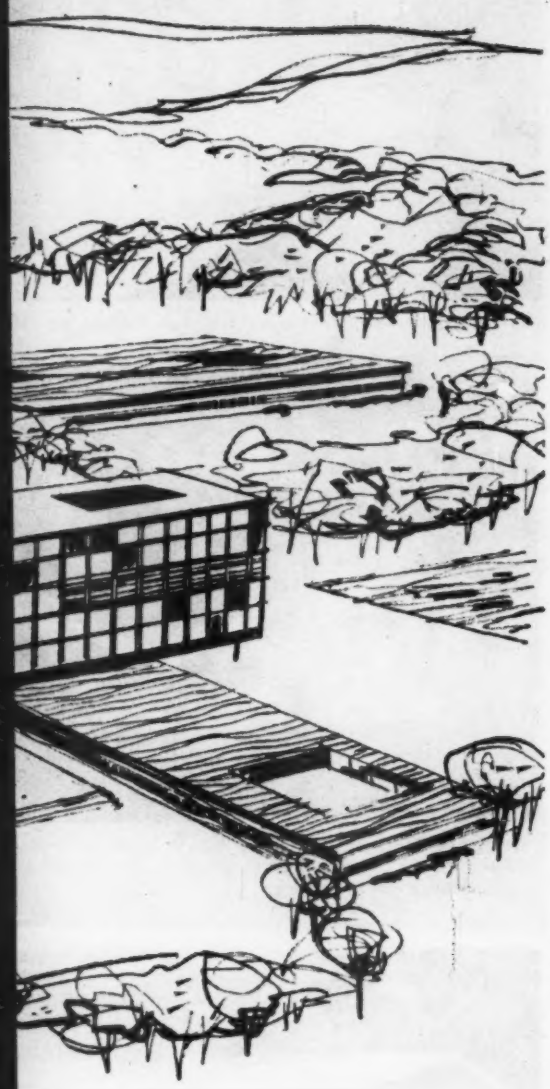

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ETHICAL PRACTICES Committee of AFL-CIO is first tribunal to try Teamsters. Case is sure to go to AFL-CIO Convention.

Teamsters Face Their Judges

As the AFL-CIO launches the proceedings that could end in ouster for the Teamsters, it must mull the consequences.

THIS WEEK, members of the Teamsters Union's executive board were scheduled to appear before the AFL-CIO Ethical Practices Committee in Washington in an effort to get square with the parent federation. But the AFL-CIO may have to go through with expelling them, in order to make the case that labor is able, willing, and determined to clean its own house.

However the long script eventually turns out, one thing is certain: The Teamsters Union will not humble itself and play the self-accusing penitent before its labor peers. And on both sides there are many factors to consider before the issue is resolved.

• **In the Balance**—As the prosecutor, from AFL-CIO counsel Arthur Goldberg's office, ticks off the corruption and racketeering charges against the Teamsters and seeks an explanation, there is more in the balance than the charges and the Teamsters' defense. The Ethical Practices Committee must weigh, in addition, the consequences of expulsion. Its conclusion will not come at once. To be sure, top AFL-CIO officials are determined to clean labor's house. But the final calculation is a choice between public indignation and loss of over a million Teamsters.

Such union leaders as AFL-CIO Pres. George Meany and United Auto Workers head Walter Reuther recognize that the McClellan committee has caught the public eye and won its support. And, as in the case of corruption in the late Truman Administration, the public will not be satisfied with the excuse that only a few union leaders are guilty of misdeeds. With major bargaining coming up next year, particularly in autos and steel, the union leaders feel they must have public backing to make progress in contract negotiations.

• **Determined**—The Teamsters' leaders, for their part, want to stay in the merged labor movement. James R. Hoffa, slated to replace Dave Beck as president of the 1.5-million-member union, says he is "just as determined that the Teamsters stay in the AFL-CIO as any man is determined to live—that's a pretty good determination."

Hoffa, stating the case for the truckers' union to remain in the federation, leaves no doubt that under the soft glove of friendship there is a hand of steel. "The Teamsters," says Hoffa, "have an equity in the AFL and have had since the days of Samuel Gompers. We have a moral right to stay in. We pay the AFL-CIO $900,000 a year (in per capita taxes). Our stay in the federation is essential, not for our survival, but because the Teamsters are so intertwined with operations of other unions. We don't want to be independent.

"Strikes, new organization drives, and politics—as labor is involved in them—will feel the effects of the Teamsters if we are independent." The threat in Hoffa's words is only slightly veiled.

Then, cloaking himself modestly in the third person, the stocky Teamsters boss-to-be adds: "Something somewhere in the merged federation doesn't want to see Hoffa as head of the Teamsters. If it is a question of Hoffa's being a candidate and being elected president of the Teamsters, and the Teamsters being expelled from the AFL-CIO"—here there's a smile—"I'll let the delegates decide that at the convention."

• **Little Doubt**—There isn't much question what the delegates to the Teamsters convention in Miami on Sept. 30 will do. The top AFL-CIO command cannot dictate what officers will or will not be elected by an international union. Beck was suspended as a member of the AFL-CIO executive council, not from the AFL-CIO or from the Teamsters' presidency.

Privately, there is some talk in Washington that the AFL-CIO executive council might try telling Hoffa's enemies in the Teamsters that they can campaign on this threat: Kick Hoffa out, or the union will be kicked out. But federation officials are skittish about this approach, lest it bring Hoffa backing he might not otherwise get. Besides, you can't replace somebody with nobody—and so far not even a promising nobody has turned up to oppose Hoffa.

• **Line of Defense**—As for Teamster reaction to the Ethical Practices Committee hearings, the union's line of defense was revealed in part during last week's board meeting in Los Angeles (BW—Aug.31'57,p106). Its main elements:

• Teamsters Pres. Dave Beck set up a five-man committee—composed of Teamsters officials of irreproachable honesty—to investigate the charters of the seven "paper locals" allegedly established by Johnny (Dio) Dioguardi at Hoffa's behest during a fight for control of New York City's Teamsters Council. There's a strong possibility that these locals may be sacrificed to prove to the AFL-CIO that the union really can clean house.

• At the same time, Hoffa neatly shifted responsibility for the New York situation to others—Thomas L. Hickey, a Hoffa opponent for the union's top post, and Martin T. Lacey, former head of the New York Teamsters Council.

• Teamsters officials also an-

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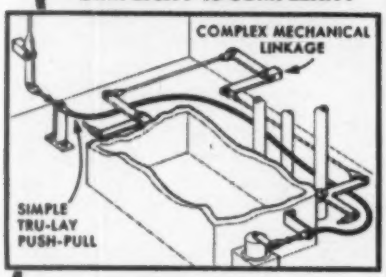

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nounced constitutional changes, backed by Hoffa, to transfer many powers of the president to the executive board and establish tighter controls over union finances. They recognize that the union must meet the standards of the AFL-CIO to remain in the federation, but they differ with AFL-CIO over use of the Fifth Amendment and the provision in the AFL-CIO code banning ex-convicts and others with criminal records from union office.

• Dave Beck, now under a seven-count indictment for income tax evasion, will go out of office, probably without all the emoluments usually accorded a retired Teamsters president.

• **Clinging to Autonomy**—But Teamsters spokesmen stoutly defend their rights to "autonomy" and to elect their own officers.

"There will be no trading with the AFL-CIO at all," says Hoffa. Still, there is no question that the AFL-CIO's top command, in deciding whether to oust the Teamsters, must consider consequences such as these:

• Loss of $900,000 a year in per capita taxes and 1.5-million members—about 10% of the federation's dues and membership.

• Break-up of working agreements between the Teamsters and 10 other AFL-CIO unions.

• Putting on the spot many unions that are vulnerable to Teamsters raiding. These unions need the truckers' support in strike action. The Teamsters hold almost life-and-death power over such unions as the building service workers, stagehands, butchers, department store workers, and others.

• **ILA Analogy**—When the AFL ousted the International Longshoremen's Assn. in September, 1953, on charges of gangsterism and corruption, there was a good chance it might win the dock workers over to the newly-chartered AFL Brotherhood of Longshoremen. It had backing from a solid core of New York longshoremen and from Paul Hall's Seafarers Union. It had the New York State Crime Commission loosening the ILA hold on waterfront jobs. Finally, it had only one collective bargaining unit to contend with. But despite all this, the AFL lost twice in its efforts to unseat the racket-ridden ILA.

With the Teamsters, the situation is much tougher; the AFL-CIO has much less on its side. The AFL-CIO leaders are not too clear about what they can do when—and if—the Teamsters are expelled. Some—Reuther included—have talked of chartering an AFL-CIO transport union to lure members from the Teamsters. Most of the federation chiefs think this is madness. A rival AFL-CIO union could offer the Teamsters members very little. Furthermore, it is doubtful whether the public would countenance the violence that might arise if the AFL-CIO were to declare open war on an expelled Teamsters Union.

• **Rift Ahead**—These considerations to the contrary, it now looks as if the AFL-CIO and the Teamsters are heading for a split. The procedure before the Ethical Practices Committee will differ sharply from that in the Senate committee. There will be no sworn testimony—and little chance to "not recall to the best of my recollection."

The proceedings are scheduled to be secret. Besides the committee, the accused, and a stenographer, the only persons present will be committee attorney Arthur Goldberg and, occasionally, George Meany. The heat will be on the Teamsters.

If their prepared line of defense doesn't work, the Teamsters may fall back on bluster and not-so-concealed threats. What happens if the committee's reaction is still chilly?

• **Probable Outcome**—Sources high in the AFL-CIO—and a few within the Teamsters—think it will turn out this way:

The Ethical Practices Committee will recommend to the AFL-CIO executive council that the Teamsters be suspended. The council, at a special meeting in New York Sept. 24-25, will vote suspension. And the Teamsters, at their convention Sept. 30, will have a chance to clean up or get out. As evidence of the former, the union will probably oust the seven "paper locals." But this will not be enough.

AFL-CIO Pres. George Meany has all but said flatly that Hoffa is unacceptable as Teamsters president—and that two of the union's vice-presidents, Frank Brewster and Sidney Brennan, must follow Beck out.

But these terms are clearly more than the Teamsters will take. At the Miami convention, they may launch a program to try to convince other AFL-CIO unions—in advance of the December convention of the federation—that the suspension should be lifted.

• **Other Choices**—If the nation's largest union is ultimately ejected—or decides to take a walk—what then?

Hoffa could revive his negotiations with the International Longshoremen's Assn., and he could extend this alliance to all the other AFL-CIO outcasts, including Harry Bridges' West Coast Longshoremen. In addition, he might act as a focal point for all the AFL-CIO disaffection—much of which stems from unhappiness with the industrial-type unions in the federation and the continuing jurisdictional disputes. The AFL-CIO can be thankful, however, for Hoffa's signal lack of success so far in rallying the building trades to his side—even though this situation could change before December. END

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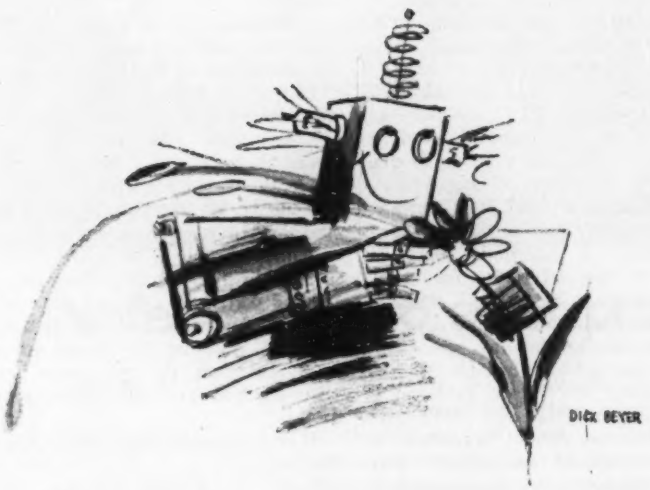

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Third Man Grows in Importance

Arbitrators are being called on more frequently than ever to settle labor disputes. One reason is trend to long contracts.

GATHERINGS like this one—between company and union representatives and an arbitrator—are becoming more and more common in labor relations.

Last week, for example, Mack Trucks, Inc. at the Bridgewater (N. J.) plant, and United Auto Workers Local 229 waited eagerly for arbitrator Arthur Stark to hand in a decision on a problem common to industry. Arbitrator Stark must decide if a change in operating methods has created new jobs.

Hundreds of other companies and unions throughout the nation currently are either presenting their cases to an arbitrator or anxiously awaiting awards that will decide questions of disciplinary layoffs, job evaluation, setting of individual wage rates, seniority, contract negotiation, and a host of other issues.

• **New Importance**—This activity marks a busy—but typical—week on the arbitration front, a front with new vitality.

ARBITRATOR George W. Taylor (right) listens to labor and management sides of dispute.

I. Statistical Picture

Arbitration has expanded steadily with the spread of collective bargaining —90% to 95% of an estimated 125,000 collective bargaining contracts contain arbitration clauses. The growing practice of signing contracts running as long as three to five years makes the role of the "third man" crucial.

The American Arbitration Assn. reports that its case load reached a new high of 2,175 cases in 1956, a 7.4% gain over the previous year. This year's case load runs 14% ahead of last year.

• **Wider Acceptance**—The Federal Mediation & Conciliation Service also reports a "wider acceptance of arbitration." Its arbitration case load in 1956 topped the previous year by 21%. So far this year, the service is handling 11% more cases than last year.

New York's State Board of Mediation, most active of the state agencies, also confirms the trend. It finds it is handling fewer mediation cases and a lot more arbitration cases. In 1956, the board handled 1,792 arbitration cases, 205 up over 1955, as against 777 mediation cases, 62 less than in 1955.

• **Survey Results**—The American Arbitration Assn. recently took a look into arbitration. Here's what they found:

• Most cases (81.6%) were handled by a single arbitrator.

• Where three-man boards were used only a few decisions (15.5%) were unanimous.

• Most arbitrators are educators (41.8%); about half of these teach in law schools. Practising attorneys account for another 34.2% of the arbitrators. Professional arbitrators make up about 14.4% of the total group.

• The average case took two to three months from the time it was submitted for arbitration to a decision.

• Arbitrators' per diem rates averaged about $100 a day, ranging from a low of $25 a day to a high of $200 in a few instances. The rate was $100 or less in almost 92% of the cases studied. The most common total fee ran between $200 and $300; more than 82% of total fees were under $400.

• Most cases (81.3%) required only one hearing day. In about half of these cases, an additional day was needed by the arbitrator for study. There appears to be a 1-to-1 ratio between the number of hearing days and study days needed for any given case. But this does not hold true for all cases.

Dr. George W. Taylor, professor of industry at the University of Pennsylvania's Wharton School, consultant to both industries and unions, and a dean of American arbitrators, in commenting on the AAA study says he is against payment on a daily rate basis. "You might," says Taylor, "get an inept arbitrator who will spend two days on a case that would take a good man a couple of hours. Maybe the guy you're paying $25 a day is overpaid and the one who is getting $200 a day is underpaid." Taylor's method departs from practice. He asks the parties what they want to pay him, rather than stating his rate. There have been cases, Taylor recalls, when the parties, on receiving his bill, have insisted on paying more.

Taylor was one of the first permanent umpires in American industry, starting in that capacity with the National Assn. of Hosiery Manufacturers and the American Federation of Hosiery Workers in 1928. He also served as the first full-time umpire for General Motors and the United Auto Workers in 1940-41. Today Taylor sees a trend to permanent arbitrators.

• **Advantages**—It is important, Taylor believes, to develop a body of precedent in arbitration so that you do not have "ad hoc" arbitrators ruling one way in one case, a different way in the next.

The veteran arbitrator feels the permanent umpire is of particular benefit in handling the big, complicated cases. For one thing, his knowledge of industry conditions increases his understanding of the problems brought to him and can speed his work in settling disputes.

The parties to a dispute can call on him, discuss a case, and perhaps settle it without resorting to formal proceedings. In effect, the permanent umpire can practice a "preventative arbitration."

The two largest companies in the two largest industries in the U. S. have permanent "third men" handling arbitration cases. General Motors and U. S. Steel pioneered with their respective unions in devising methods for handling disputes arising under their contracts. GM's system of permanent arbitration has undergone little basic change since it was put into operation in 1940. U. S. Steel, however, has overhauled its machinery and established it on a new basis in 1950-51.

• **GM-UAW System**—The General Motors-United Auto Workers system is an "umpire system in the strictest

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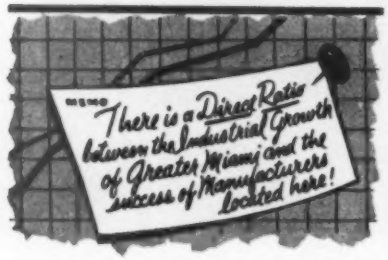

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sense," according to a GM spokesman. No latitude is allowed for making rules that are not in the contract. The arbitrator is Nathan Feinsinger.

Actually, Feinsinger handles only a small percentage—.3%—of all grievances that arise over the interpretation of the contract. The bulk of disputes are handled directly by the union and management at various levels. Only the thorniest of them pass to the top. Feinsinger gets an annual fee of around $35,000—payment of which is split between UAW and GM. He has a yearly contract, which each party need not renew.

• **Steel Setup**—U. S. Steel and United Steelworkers arbitration system is a good example of one in which a three-man board evolved into a single, permanent arbitrator. At the end of World War II, the steel arbitration board was a three-man affair, with one representative from USW, one from U. S. Steel, plus an independent. This system was discarded a few years later—the labor and management representatives invariably were at odds with one another, and the independent arbitrator was making most of the decisions anyway.

In steel, both sides may use written and oral arguments, briefs and witnesses. It's estimated that witness appear at the hearings in as many as 90% of the cases.

The U. S. Steel-USW arbitrator, Sylvester Garrett, holds about 80% of his case hearings in Pittsburgh, but also sets up shop regularly in Chicago, Birmingham, and San Francisco, with occasional stops elsewhere.

• **Additional Help**—Garrett technically heads a board of arbitration; as chairman, he can call up two other men (specified in the contract) for consultation, one appointed by the union, the other by management. In addition, Garrett on occasion retains someone to hear individual cases and to recommend a solution to him. However, Garrett makes the final decisions in all cases.

Garrett's term of office is indefinite as long as he meets "conditions mutually agreed upon." Arbitration expenses, are shared equally by the company and union, come to approximately $100,000 a year for the whole package.

Both U. S. Steel and USW consider arbitration an integral part of modern, large-scale industrial relations. But, as in the case of General Motors and UAW, other procedures are used first in an attempt to settle disputes. Arbitration is mandatory, however, if an issue can't otherwise be settled. And the findings of the arbitrator are binding.

II. Current Trends

Disciplinary layoff and discharge cases are the most frequent among those to reach arbitration, according to arbitration agencies. Cases involving job evaluation, work load and assignments, individual wage scales place second on the arbitration docket. Seniority cases, formerly in second place, have slipped into third, say the agencies.

• **The Decisions**—Which way are decisions in arbitration cases going? It's hard to tell. Arbitrators seemingly are becoming more firm in upholding management in discipline cases. Unions are not winning as many cases as they used to, says one arbitrator. Management has learned how to settle "bad" cases before they reach the arbitration stage, and is making better presentations of cases being arbitrated. Management also is less bothered than unions by considerations of what its followers will think. Unions, the arbitrator feels, take many cases to arbitration they know they can't win.

Arbitration became solidly established as the unions became more sure of themselves in dealing with management. The long-term contract was a further impetus. While the really big issues between labor and management may be postponed until new contract negotiations are scheduled, most disputes can't wait and go directly into the grievance hopper. The actual number of disputes coming before the arbitrator may be small. But the precedents he has established in the past and the fact that he is available if other efforts fail serve as pressures on both parties to settle the grievances on the lower levels. The impact of arbitration, therefore, is greater than the number of cases reaching arbitration indicates.

• **Outlook**—As for the future, arbitrators themselves point to these trends:

• Arbitration of wage questions under re-opener clauses in long-term agreements probably will increase. Arbitration, however, will not substitute for collective bargaining when contracts terminate. Neither unions nor management wish to turn basic decisions over to a third party.

• Arbitration case loads may grow as contracts grow longer. Already in some industries where one umpire formerly sufficed, two and three associates are now the rule. General Motors' experience indicates, though, that this may be a temporary condition. From 1950 to 1956, the number of grievances filed by the company and union increased from 44,000 a year to 114,500; at the same time, arbitration decisions dropped from 85 a year to 47. As a backlog of precedent builds up, it may cut deeply into the number of cases reaching the arbitration stage.

• Mediation probably will increase as a method of settling grievances headed for arbitration. Some arbitrators report success in using a mediation "half-step" between the top grievance level and final arbitration. It eases their case load. END

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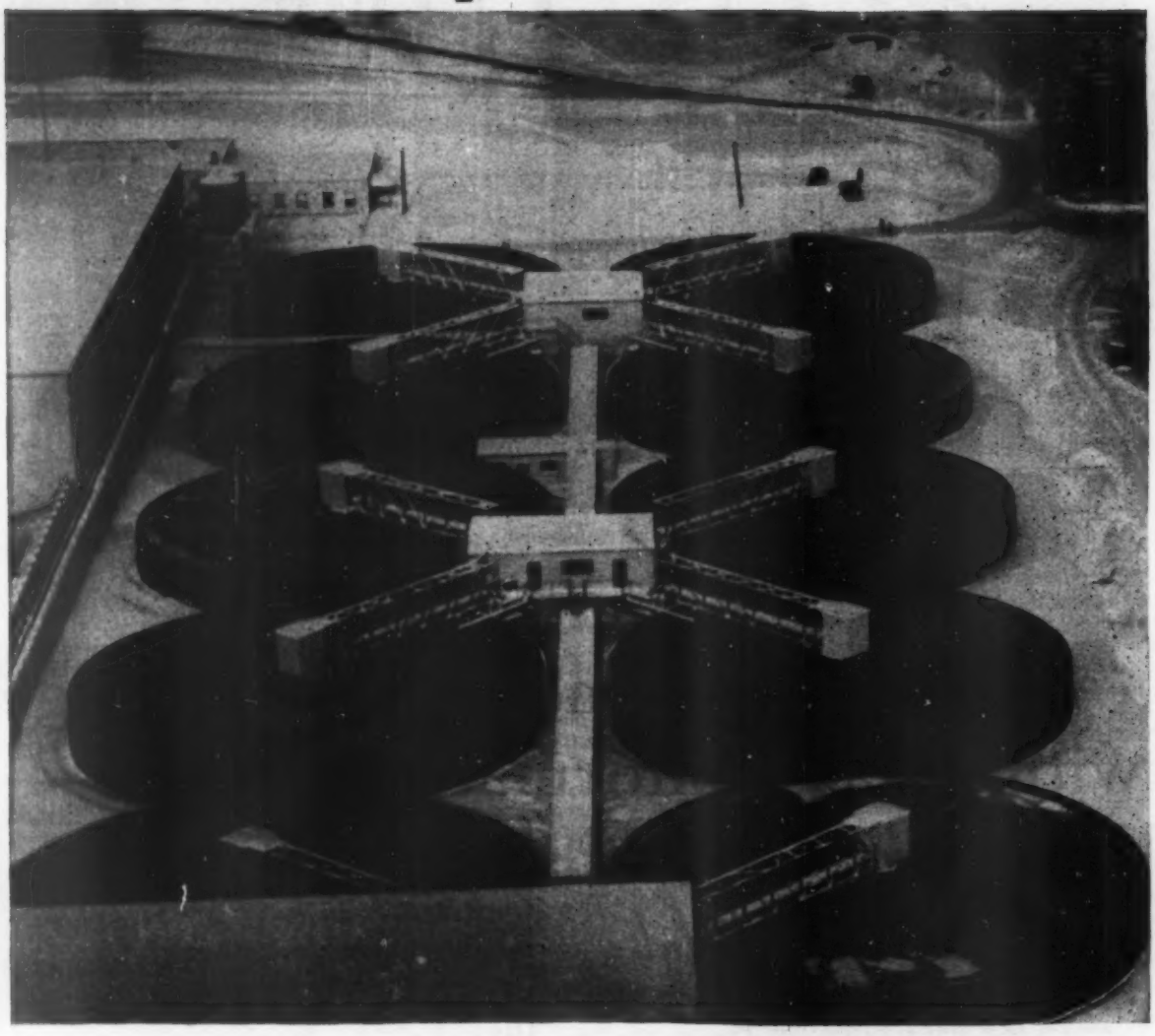

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Reuther Prepares New Ammunition During Lull in Auto Price War

There's been a temporary halt in the slugging between Walter Reuther, president of the United Auto Workers, and the presidents of General Motors, Ford, and Chrysler on whether the auto industry can cut 1958 car prices $100 and still give wage increases next spring (BW—Aug.31'57,p104).

Reuther was off on a flying visit to Europe after asking Pres. Eisenhower to have his economic advisers conduct a fact-finding inquiry, and blasting in a press conference the Big Three's refusal to cut prices. It was, said Reuther, "the longest 'No' we've had and we've had some pretty long ones in 20-some years." Not a single one, he said, denies they could cut prices; their replies were "loaded with double-talk and evasion."

Reuther hardly had finished speaking before the auto presidents had their replies. Chrysler's L. L. Colbert said, "Nothing that came out of today's statement changes the nature of the proposal which I explained for what it was." GM's Harlow Curtice said Reuther "ignores the constructive suggestion made by General Motors" [to extend the existing contract]. Henry Ford II was bitter: "The latest statement by Mr. Reuther is another desperate attempt on his part to smokescreen the inflation-fanning demands he will make of the automotive companies next June."

Apparently there is more to come when Reuther returns next week. If Eisenhower does not order a fact-finding study—which would hear witnesses from UAW and the auto companies—Reuther says he has a "step three" ready. He couldn't be coaxed into saying what it might be; but Detroit observers are sure the language will not get milder.

• • •

UAW'S "Supreme Court" Tackles Its First Batch of Cases

The United Auto Workers' Public Review Board, set up by the union's convention last spring as its watchdog of manners and morals, officially went into business last week. It has an office in Detroit, an executive secretary, and a wad of cases—all before the board has had its first official meeting.

Appointed to the $15,000-a-year job of executive secretary was Walter E. Oberer, a University of Texas law professor, native Detroiter and formerly associated with a Detroit law firm.

His office is at 1408 David Stott Building, Detroit.

The board was established by UAW through constitutional amendments for two general purposes:

• To give union members a "Supreme Court" to which to appeal decisions from the UAW International Executive Board. Formerly, the only appeal was to the international union convention held every two years.

• To monitor the union's handling of ethical practices cases.

The first batch of cases falls within the latter category; UAW Pres. Walter Reuther has asked the board to review the proceedings in the cases of five local union officials, and four union staff people who used the privileges of the Fifth Amendment before the Senate Internal Security subcommittee.

Members of the board are: Chairman, Rabbi Morris Adler, Detroit; Magistrate J. A. Hanrahan, Windsor, Ontario; Msgr. George C. Higgins, Washington, D. C.; Dr. Clark Kerr, Berkeley, Calif.; Judge Wade H. McCree, Detroit; Bishop G. Bromley Oxnam, Washington, D. C.; Dr. Edwin E. Witte, Madison, Wis.

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Stuffing of Ballot Boxes Charged In Steelworkers Election

Post-election difficulties continued to plague Steelworkers Pres. David J. McDonald, as the Senate Committee on Improper Activities in the Labor or Management Field looked into charges of illegal tampering in the Feb. 12, 1957 steel union elections.

An unemployed steel worker, George E. Crosby, said last week that he told the Senate Committee in a closed session that he had stuffed ballot boxes on instructions from a union official. A prompt denial has been made by counsel to Harry T. Llewellyn, the union official named by Crosby. Llewellyn is a zone committeeman for Local 1843. He was supporting McDonald for reelection. His local voted 2,115 for Rarick to 695 for McDonald.

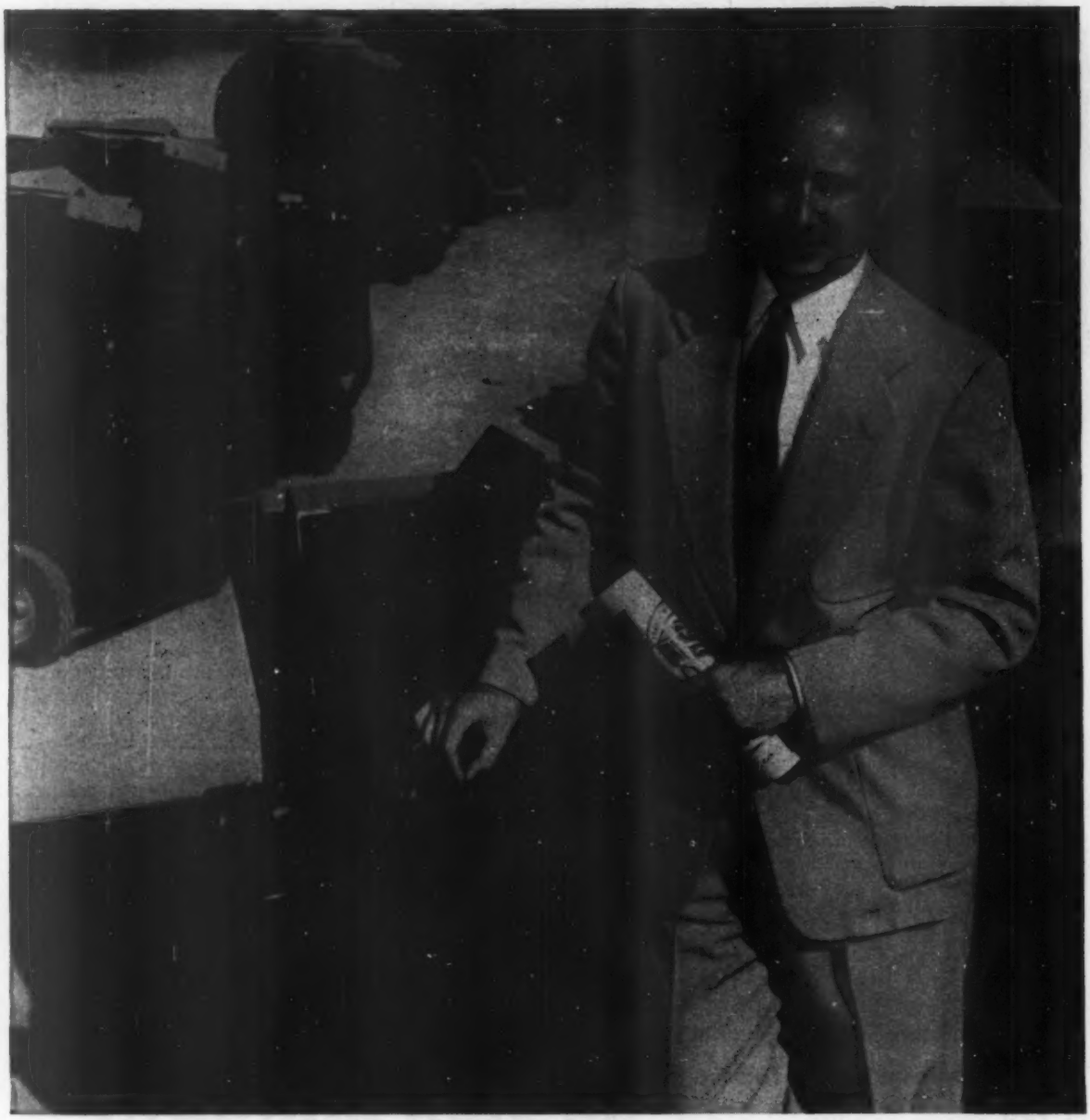
Donald C. Rarick, McDonald's opponent, has charged that union funds had been used to help the Steelworkers president win. McDonald has informed the Senate committee that to the best of his knowledge no union funds had been used.

Sen. John L. McClellan (D-Ark.) reported a sharp conflict in testimony. He said, however, that he had not determined what step to take next.

• • •

Birthday Holiday Sweetens Pay Boost For Pittsburgh Brewery Workers

Three Pittsburgh locals of the International Brewery Workers wrapped up a birthday present and a pay boost for their members in a two-year contract signed last week. Each worker will get his birthday as the eighth holiday negotiated in the new agreement accepted by brewers, bottlers, and drivers of Duquesne Brewing and Pittsburgh Brewing companies. The contract also provides a 10¢-an-hour wage increase retroactive to Aug. 1; 2½¢ more next Feb. 1; and an additional 10¢ on Aug. 1, 1958. A union spokesman said he believes that the brewery contract is the first in the area to give a worker a paid holiday on his birthday. "I never heard of it before, but believe me the men like it," he said.



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Wall St. Talks . . .

. . . about new debt issues . . . rail earnings . . . poor showing of dividends . . . steel's operating rates.

The new issues market seems to have lost some of its recent firmness. Last week, few investors showed their earlier enthusiasm for buying new corporate and municipal offerings. Interest cost of the Treasury's latest bill offering edged up to a new 24-year high of 3.57%. Probable reason for the return of caution: the great flood of new offerings expected this fall.

Recent bullishness on rail stocks (BW–Jul.20'57,p156) has also just about vanished from the Street. July operating reports were disappointing. Some analysts now fear that, instead of nearly equaling last year's net of $874-million, the Class 1 roads may not earn more than $800-million.

More dividends were omitted last month than in any other month in three years, says the New York World-Telegram & Sun. Twenty-two were omitted, and 11 reduced–a total of 33 on the acid side, compared with 42 increases. In August, 1955, the tally was 11 reductions and omissions vs. 62 increases; in the same month last year, 14 downs vs. 66 ups.

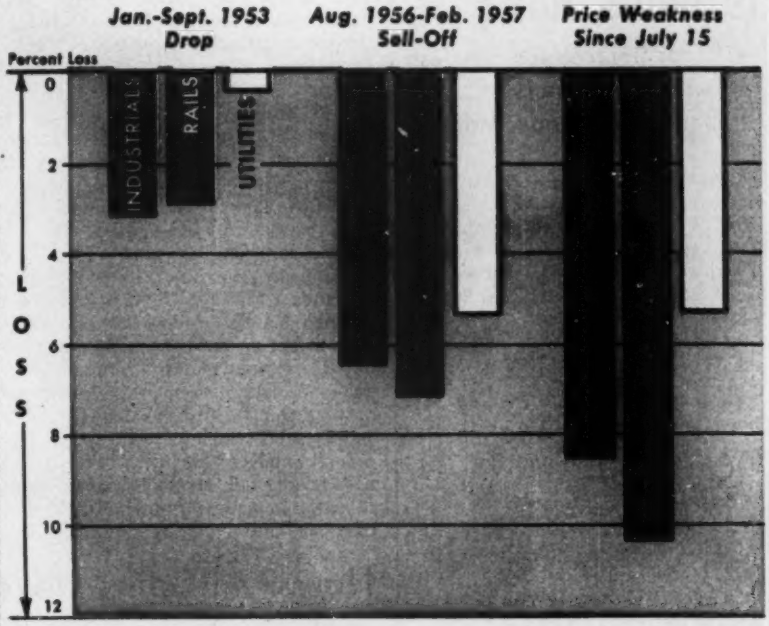
Steel production will start moving up, "beginning not later than October," says Standard & Poor's, and fourth-quarter operations should average about 85% of capacity, compared with a current 83%. Like some shrewd Streeters, S&P thinks "profit experiences . . . are likely to be mixed." That's because "fully integrated producers have a cost advantage" over those that are "heavily dependent on outside sources for coal, coke, iron ore, scrap, etc."–especially at these operating levels.

Living up to its name: Automation Shares, Inc., new open-end fund, will invest only in "automation" stocks. And in its analytical work, the fund's investment adviser, the Council of Ecnomic & Industry Research, Inc., will exploit automation–it will use an IBM 704 computer.

Refreshing candor: In our opinion, a poor fourth quarter will reflect adjustment . . . [not] . . . a real reversal in trend, but . . . no opinion, including ours, is worth much when it comes to business forecasting." (Hayden, Stone & Co.)

This Sell-Off vs. Earlier Major Downswings

(First 35 Trading Days)



Data: Standard & Poor's Daily Price Indexes.

Can the Rally Last?

Most Streeters doubt that it can have much "follow through," but the hardier bulls hope it knells the death of a 35-day slump.

LAST WEEK the stock market took a sharp change for the better from its recent pattern. Two brisk rallies enabled the pre-Labor Day week to close with gains in all three major averages–industrial, rail, and utility. It was the first time that all three had climbed in seven weeks on the Big Board. And it left the Street wondering just how much follow through there would be by the end of this week.

Some incorrigible bulls felt new hopes that the sharpest 35-day drop since the bull market began in mid-1949 (chart) had finally run its course. But more sober minds could extract no such meaning from last week's doings. Here are some of the factors they considered:

• **Reaching Lows**–As Standard & Poor's reported to clients this week, the pre-Labor Day turnabout had come only after both S&P's rail and utility stock price indexes had "dropped to new 1957 lows and the industrials had canceled 70% of their February-July rise." Thus, "after a correction of these proportions, the market was ripe for a technical rebound . . ."

Moody's reported from this angle: "The staying power of last week's rally still remains to be tested" since "it was centered on defense and related stocks and was no doubt touched off by Russia's statement about her long-range missile and her strong negative stand on our disarmament proposals."

• **Facts in Support**–These cautious views found plenty of support in various aspects of the market this week.

On Tuesday, Big Board trading did show follow through to the strength of the previous week, but that strength was pretty much concentrated in relatively few groups, notably the "international" oils, the ethical drugs, and a few steels. And from a technical standpoint the size of Tuesday's buy orders was equally disappointing; volume for the day sagged a bit under 1.5-million shares, to the second lowest of the year.

The showing on Wednesday was even less inspiring. Volume continued light, and most of the orders that did filter into the market seemed to be profit-taking operations. The profit taking never assumed really virulent force, but by the end of the day, all of Tuesday's gains had vanished along with some made the week before.

Standard & Poor's sums up the situ-

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TECHNICAL PAPERS FOR INDUSTRY

ation by blaming it on the simple fact that the market lacks "the stimulus of any well-defined prospects for an upturn in corporate earnings" and thus "may have to undergo further testing," despite its already sharp plunge, "before establishing a solid base for sustained advance."

• **The Bullish View**—But some Streeters can't go along with S&P's generally accepted view, and such dissenters are worth listening to if only because it is such divergences of view that make stock markets. Here's what one dissenter has to say:

"Consider the American economy as it stands at present. Ford bringing out the new Edsel . . . representing a $250-million bet on the continuance of prosperity. Employment at the highest peak in our history. Manufacturing costs rising because inadequate labor supply results in high wage rates. The federal budget for the year ahead, despite idle talk about economy, up at or close to a peacetime high. Money expensive and tight because there isn't enough to go around; so great is the demand by industry and all levels of government."

• **Ills Pooh-poohed**—This same Streeter admits that "currently there are maladjustments in certain sectors." But he claims that "production can't always be in precise balance with demand," that "it is an understandable custom of business to lean on the side of more-than-adequate productive facilities," and that never will we find "every industry in balance and every industry equally prosperous."

So he finds that the "worst" that's ahead for this bull market is a leveling off or cooling off "period before the economy forges vigorously forth again." At the same time, he admits that "we may have a long siege of scary markets ahead," but "in the investing world, as elsewhere, the big rewards rarely go to the fair weather sailor."

He speaks out boldly, but there are few other Streeters who are equally willing right now to "argue with the market."

How Rail Gains Have Evaporated

	Feb. Low	Subsequent High	Recent Level	Max. Feb.–July Rally Gain	Gain Recently
Western Maryland	$49.00	$87.62	$71.37	+78.8%	+45.7%
Baltimore & Ohio	41.12	58.62	52.75	+42.6	+28.3
Central of Georgia	40.00	52.25	49.00	+30.6	+22.5
Virginia Ry.	26.60	37.60	31.75	+41.4	+19.4
Denver & Rio Grande Western	38.37	48.25	45.75	+25.7	+19.2
Chicago & North Western	22.87	34.75	26.75	+51.9	+17.0
Chicago Gt. Western	32.50	42.00	37.87	+29.2	+16.5
Minneapolis & St. Louis	20.00	25.25	22.75	+26.3	+13.8
Western Pacific	54.75	64.37	61.50	+17.6	+12.3
Colorado & Southern	39.37	50.12	43.50	+27.3	+10.5
Pittsburgh & W. Virginia	23.62	29.37	25.50	+24.3	+ 8.0
Atlantic Coast Line	39.00	50.25	42.00	+28.8	+ 7.7
Boston & Maine	15.00	19.00	16.00	+26.7	+ 6.7
Chi., Mil., St. P. & Pac.	16.00	20.37	17.00	+27.3	+ 6.3
New York Central	27.62	36.62	29.12	+32.6	+ 5.4
Great Northern	40.37	47.75	42.50	+18.3	+ 5.3
Union Pacific	27.25	31.75	28.[illegible]	+16.5	+ 2.8
Chesapeake & Ohio	59.25	69.87	60.75	+17.9	+ 2.5
Norfolk & Western	62.75	70.75	63.50	+12.7	+ 1.2
Reading	31.50	34.50	31.50	+ 9.5	.....
Louisville & Nashville	76.00	93.75	76.00	+23.4	.....
Seaboard Airline	30.50	36.00	30.50	+18.0	.....
Delaware & Hudson	26.37	28.87	26.37	+ 9.5	.....
Chi., R. I. & Pacific	33.62	37.75	33.00	+12.3	− 1.8
Southern Pacific	42.12	46.87	41.25	+11.3	− 2.1
Atch., Topeka & Santa Fe	23.75	27.00	23.12	+13.7	− 2.7
Minn. St. P. & Ste. Marie	18.00	21.50	17.50	+19.4	− 2.8
Kansas City Southern	66.00	77.75	63.00	+17.8	− 4.5
Central R.R. of N. J.	28.00	36.00	26.75	+28.6	− 4.5
Southern Ry.	41.12	45.87	38.87	+11.6	− 5.5
N. Y., Chicago, St. Louis	26.00	29.25	24.12	+12.5	− 7.2
Northern Pacific	39.12	49.75	36.25	+27.2	− 7.3
Missouri Pacific	39.62	44.25	36.25	+11.7	− 8.5
St. Louis-San Francisco	20.37	26.62	18.62	+30.7	− 8.6
Chicago & Eastern Ill.	20.87	23.75	19.00	+13.8	− 9.0
Illinois Central	53.12	63.37	48.00	+19.3	− 9.6
Pennsylvania R.R.	20.00	22.50	19.37	+12.5	− 9.7
Bangor & Aroostook	46.25	57.25	41.25	+23.8	−10.8
N. Y., N. H. & Hartford	13.75	17.00	12.25	+23.6	−10.9
Lehigh Valley	14.75	17.25	13.00	+16.9	−11.9
Gulf, Mobile & Ohio	30.12	32.50	23.87	+ 7.9	−20.8
Missouri-Kansas-Texas	9.50	12.75	7.50	+34.2	−21.1
Erie	18.50	20.37	14.50	+10.1	−21.6
Texas Pacific	150.00	160.00	114.50	+ 6.7	−23.7
Delaware, Lack. & Western	19.75	25.50	13.75	+29.1	−30.4

Twist wires . . . dip in solder . . . joint is complete without first removing the insulation—with Anaconda's new Analac magnet wire.

Soldering without stripping the insulation speeds production

Motor stator and coils wound with Anaconda's solderable magnet wire.

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They may produce many thousands of coils every day. Stripping off the thin insulation on the magnet wire that goes into these windings eats up time and money. In very fine wire, the problem is even worse: the conductor can be easily damaged.

THE SOLUTION: For years, wire and cable manufacturers worked to develop a magnet wire that could be soldered without first stripping the insulation. But insulated wires that were "solderable" lost vital properties. Finally, Anaconda engineers came up with a long-sought insulation: "Analac." Now electronic manufacturers and other users have a reliable, solderable magnet wire. Result: faster production . . . lower costs.

THE FUTURE: At Anaconda Wire and Cable Company, the kind of skill that solved this knotty problem helps provide the wires and cables for the expanding needs of *all* industry. Anaconda's other fabricating company — The American Brass Company—also serves industry with a complete line of copper and copper alloys in the form of sheet, strip, wire, rod, tube and special shapes. Whatever your problem, whatever your industry — the Man from Anaconda is ready to help you. Call him today. The Anaconda Company, 25 Broadway, New York 4, N. Y. 67258

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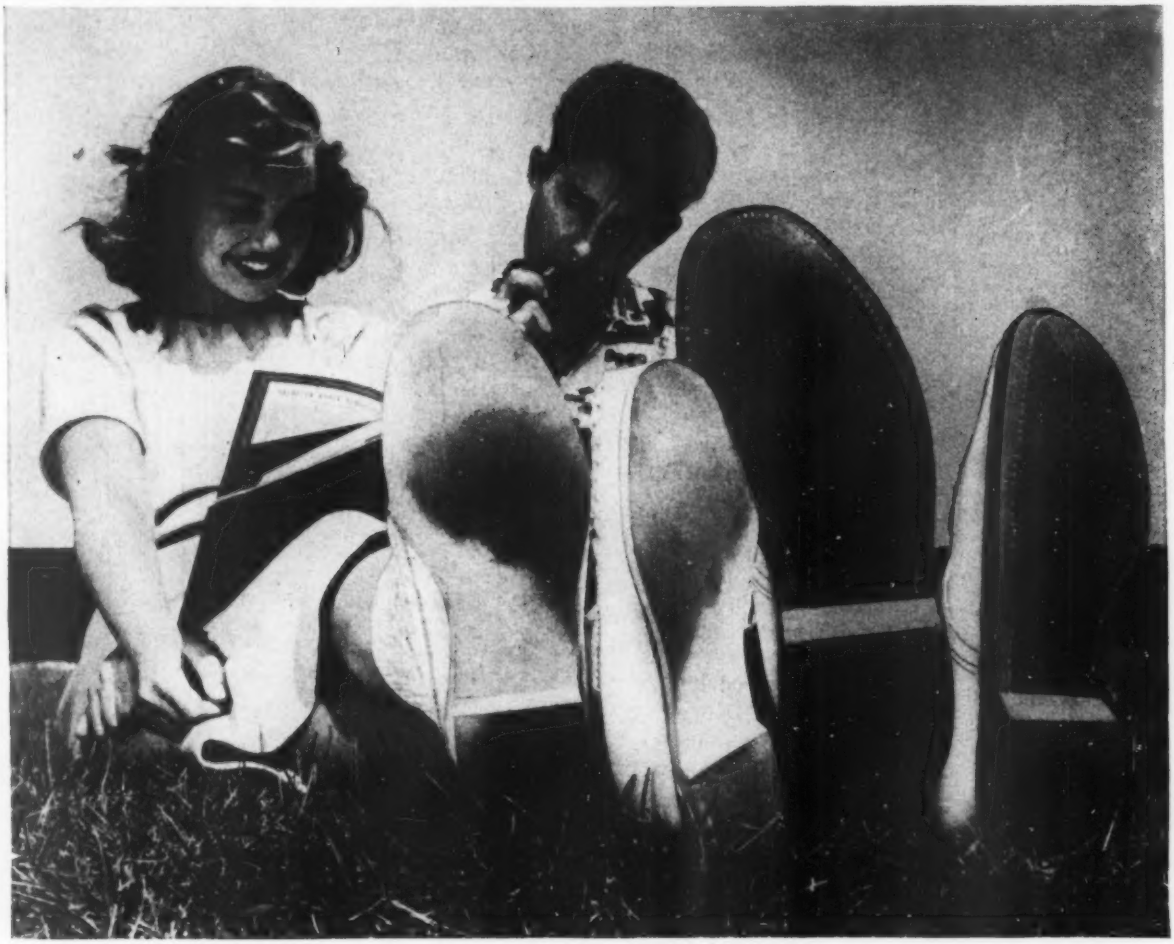

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PERSONAL BUSINESS

BUSINESS WEEK
SEPT. 7, 1957

Every new-model time the argument breaks out all over again: **Which cars demand premium or super-premium gasoline for top performance?** And the question isn't limited to the brand-new engines that come on the market. **It applies almost equally to every car already on the road.**

One thing is sure: **Super-premium gas will be needed in some 1958 models that will be advertised as requiring just "premium" fuel.** And, conversely, it would be a waste of money to buy the higher-priced grades for still other '58 models that will thrive on "regular." Here's the gasoline story:

Regular gas is rated at 90 or 91 octane (about the same as premium gas only a few years ago). Premium gas today rates about 98; super-premium has a rating of 100 to 102.

"Octane" is a measure of a fuel's resistance to engine "knock"—the higher this resistance, the more power derived by the engine from the same quantity of fuel, provided the engine is so designed that it can put this added power to use. **If you use lower-octane fuel than the engine requires, you get engine knock and possible damage, sluggish performance, maybe less mileage per gallon.** If you use higher-octane than the engine requires, you're paying extra money for potential performance that you can't use.

Half of all the 1958 cars produced will be classified officially as requiring "premium" gasoline. Generally, these are the highest-compression—and highest priced—cars on the market: Buick Century, Super, and Roadmaster; Cadillac line; Chevrolet V-8, with "power pack"; Chrysler line; De Soto line; Dodge Custom Royal, and D-500; Edsel line; Ford Thunderbird; Hudson line; Imperial (Chrysler); all Lincolns; all Mercurys; all Nashes; all Oldsmobiles; Packard Hawk; Plymouth Fury, and Fury "power pack"; all Pontiacs; and the Studebaker Hawk.

However, top auto company engineers say that **one-third of these cars**—more than 16% of total auto production—**will probably need super-premium gas (100 to 102 octane) for best performance.** This list includes cars with compression ratios around 10½ to 1. The Lincolns, Buick Roadmaster, Olds 98, Chrysler Imperial, and a new Mercury model (biggest in the line) will probably need super-premium for best performance. Cadillac may be in this group, too.

These engineers point out that 98 octane will work fine—while engines are new and clean. **After a few thousand miles of driving, however, the octane requirement may be expected to jump three or four points, perhaps more.**

This increase in demand for anti-knock qualities also affects the lower-compression, lower-priced new cars, as well as most cars now on the road. The safest advice for these cars: Try regular gas, and if the engine operates smoothly, without ping or knock, stick to regular. As carbon deposits form, the engine may knock under load; then you should step up a notch in octane ratings.

With equal octane ratings, some brands of gas may perform better than others, though in theory this shouldn't happen. **So it's a good idea to try various brands** to find the one that's best suited to the small variations in the design and construction of your car's engine.

1958 engines will be more powerful and faster than those on the road today. To get maximum mileage per gallon, generally, you'll have to stay within the 50 mph limit, and avoid fast starts.

BUSINESS WEEK
SEPT. 7, 1957

Don't look for an increase in the foreseeable future in the rate of interest you get on your bank deposits. An American Bankers Assn. survey of nearly 1,900 banks from coast to coast shows little chance of a boost.

The top rate reported by savings and commercial banks is 3¼%. Mutual savings banks commonly pay 3%—the rate reported by 69% of the 363 mutuals that replied to the questionnaire. In cities and large towns, nearly all commercial banks respond to this competition by paying at least 2½%, many of them 3%. But ABA notes that 43% of the 1,429 commercial banks contacted—mostly in smaller towns where competition isn't so keen—are paying only 2%.

—•—

Dog fanciers have a big month for watching purebred dogs perform —the annual Westchester Dog Show at Port Chester, N. Y., comes this weekend, and National Dog Week (Sept. 22-28) brings exhibitions all over the country.

Whether you're showing your new Rhodesian Ridgeback pup or just watching your friends' dogs go through their paces, take special note of the Obedience Trials—they're more popular and competitive than ever.

In these purebred trials, a dog is scored solely on performance. Yet no matter where he places, he gets credit toward one of three American Kennel Club degrees: C. D. (Companion Dog), C. D. X. (Companion Dog Excellent), or U. D. (Utility Dog). Or if he's very advanced, he may be working toward his T. D. (Tracking Dog) or U. D. T. (Utility Dog Tracker) degree.

However, obedience lessons are a good idea for any dog—whether purebred or mongrel. They teach him to be generally well-behaved (especially important in city apartments and crowded suburban communities), and they show his owner how to control him at all times.

The dog will be taught important and useful exercises such as heeling on and off leash, sitting, staying, jumping, and retrieving. And if he's really brainy, he can learn scent discrimination and tracking. And contrary to mistaken belief—obedience lessons won't break the dog's spirit—**in fact, most dogs actually enjoy their training sessions (say the experts).**

It's never too late to have a dog trained—some 7-year-olds are star pupils, though 8-18 months is the ideal age. You can give your dog general training yourself with the help of good books such as Training You to Train Your Dog by Blanche Saunders (Doubleday, $3). Or if you have a puppy and just want him housebroken and leash-trained, you can send him to a professional trainer for 2 to 6 weeks at a cost of around $35 to $40 per week. **But for formal obedience or competition training (purebreds only), he should go to a professional instructor's class:**

• Large group classes (with 20 or more dogs) are sponsored by many breed clubs, obedience training clubs, and local humane societies. **They cost around $15 for 10 weekly lessons.** A list of these clubs can be obtained from the American Kennel Club (221 Fourth Ave., New York, N. Y.) or the Gaines Dog Research Center (250 Park Ave., New York, N. Y.).

• **Smaller classes (about 10 dogs) are available with private trainers,** for around $15 for 5 weekly lessons.

• **For private competitive training, a professional dog "handler" will train the dog for his C. D. degree** and campaign him around the circuit of dog shows for you. Cost is about $300 plus the entrance fees.

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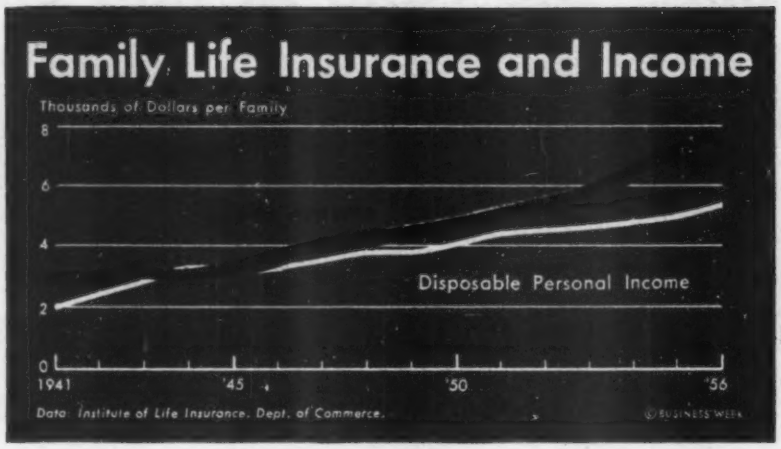
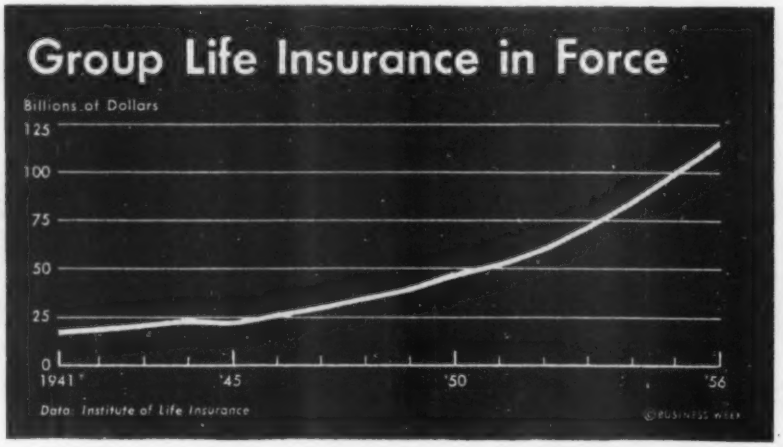


Family Protection Keeps Growing

During the postwar period, life insurance has grown significantly as a form of security for most families. The amount of life insurance per family has grown more rapidly than disposable personal income. The average amount of life insurance owned per family was $7,600 at the end of 1956; disposable personal income per family was $5,300.

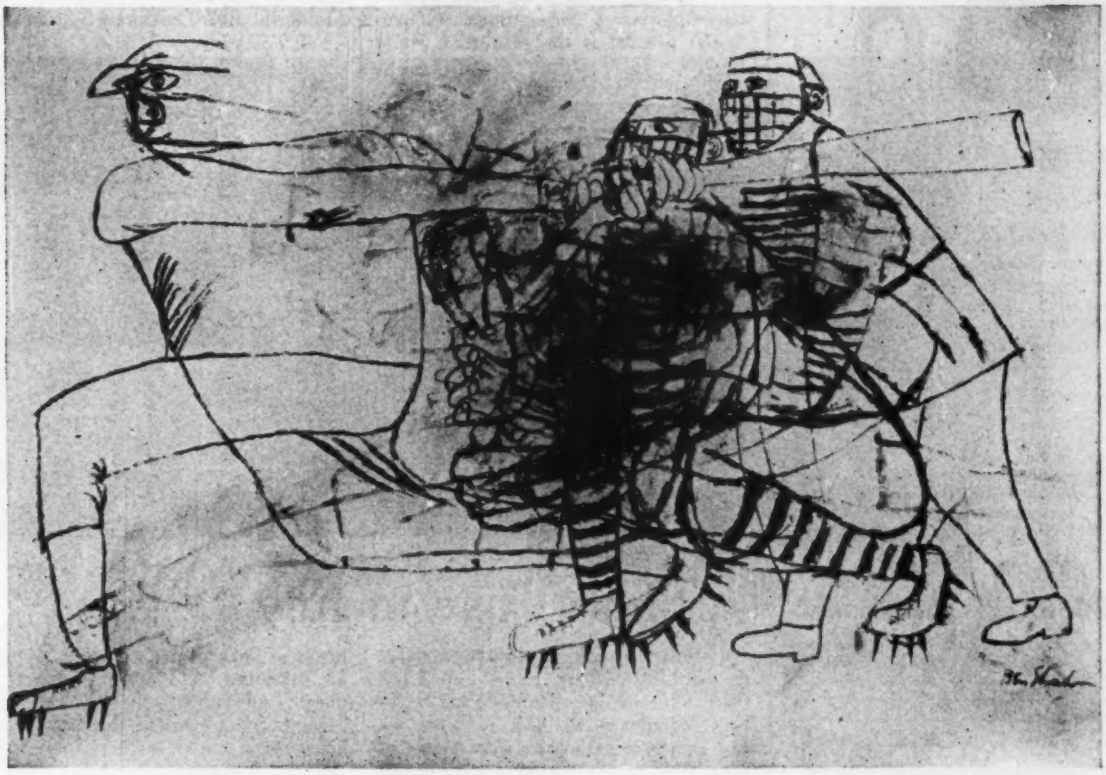
Record purchases of life insurance during 1956 brought to 106-million the number of policy holders at the end of the year, according to the Institute of Life Insurance. The institute also reports that the amount of protection rose to an all-time high of $412.6-billion. The total number of individual life insurance policies and certificates in force at the end of last year had grown to 261-million.



A Steady Postwar Climb

Group life insurance has become a significant employee benefit in the postwar period. During 1956 alone, the amount of new group life insurance purchased in the U. S. was nearly 10 times the amount purchased in 1945. The amount of this type of insurance in force at the end of 1956 rose to $117.3-billion. By the end of 1956 over half the civilian non-agricultural workers in the country were covered by employer-employee group life insurance. The largest single group life insurance plan ever written covered 2-million employees of the federal government in 1956 for $10.1-billion. The bulk of

(Advertisement)



Subversion in Dallas

This is the way action at home plate looked one day to Ben Shahn, the artist. Entitled "National Pastime," it was included by the publishers of *Sports Illustrated* in a traveling exhibition called "Sports in Art," which was composed of 102 pictures from American collections. The selection covered a wide range of sports activities—from Goya's bullfighter to Frasconi's rope-jumping children.

The collection went from Boston to the Corcoran Gallery in Washington. The third showing was in Louisville, after which it was scheduled to go to the Dallas Museum of Fine Arts on March 25, 1956.

But in January a group calling itself "The Dallas Patriotic Society" demanded that the Dallas Art Association refuse to hang four of the pictures in the exhibit.

The Society's complaints were not directed at the pictures or their content. The demand for removal was on the ground that the artists who painted them were reported to have "Communist or Communist-front records." The Trustees of the Art Association investigated these charges with care and diligence.

The Trustees rejected the demand of the Society. In part, they said "***...One of the basic principles of American Justice is that a person is presumed innocent until proved guilty, viz. Article VI, Bill of Rights, Constitution of the United States...*** the fundamental issue at stake is that of freedom and liberty—not just for the Dallas Museum of Fine Arts, but eventually for our school system, our free press, our library, our orchestra, and the many other institutions of our society. We believe that democracy cannot survive if subjected to bookburning, thought control, condemnation without trial, proclamation of guilt by association —the very techniques of the Communist and Fascist regimes."

Thus the Dallas Trustees spoke out for the people of Dallas.

President Eisenhower has said "that freedom of the arts is a basic freedom... For our Republic to stay free, those among us with the rare gift of artistry must be able freely to use their talent. Likewise our people must have unimpaired opportunity to see, to understand, to profit from our artists' work."

The right to see was not impaired in Dallas.

The stand of the Trustees of the Dallas Art Association is an example of the countless ways in which Americans are strengthening the tradition of fair play in their daily lives. In ways like these the principles of Jefferson, Madison and Lincoln live in twentieth-century America.

The American Traditions Project of the Fund for the Republic has compiled hundreds of true stories of contemporary Americans whose actions have advanced the cause of freedom and justice. Some of these stories have been published in an illustrated booklet, "The American Tradition in 1957." Free copies are available. Write to the American Traditions Project, Box 48462 - CB, Los Angeles 48, Calif.

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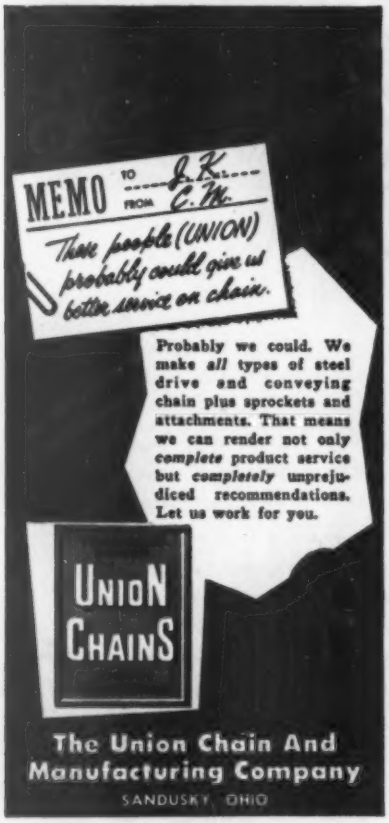
MEMO
TO J. K.
FROM C. M.
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Probably we could. We make all types of steel drive and conveying chain plus sprockets and attachments. That means we can render not only complete product service but completely unprejudiced recommendations. Let us work for you.
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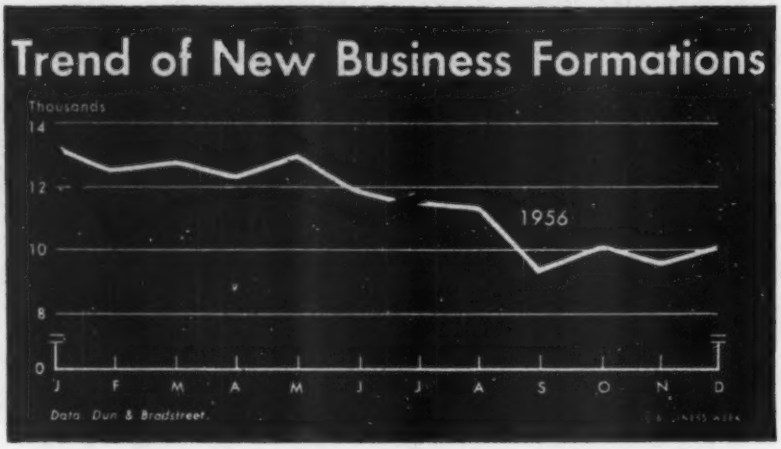
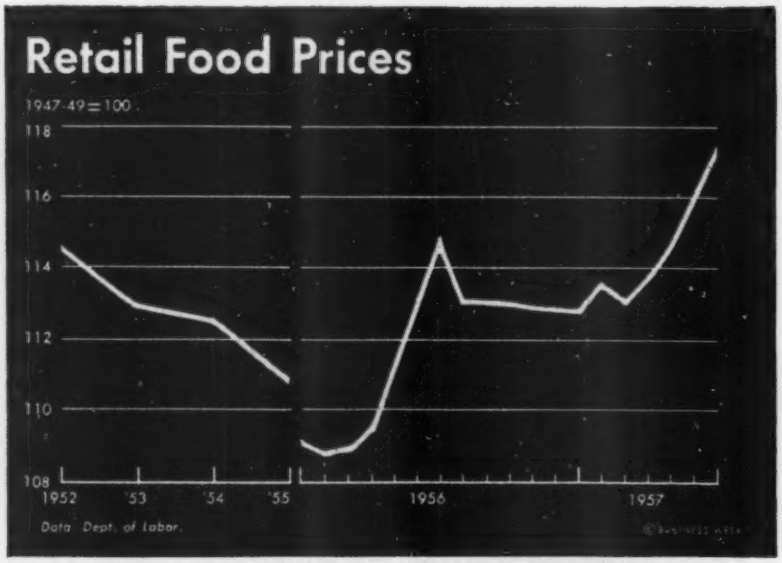
the business, though, has been written on employees of corporations. Of particular interest is the plan that would cover all employees of companies making up the Bell Telephone System (BW —Feb.9'57,p34).



A Slight Rise in July

In July, new business incorporations in the U.S. rose to 11,686—up 1.5% from a year earlier. Except for a slight gain in January, the July rise was the first year-to-year increase since October. For the first seven months of 1957, new business incorporations were running 5.6% behind the 1956 level. Since the number of failures also has remained high this year there probably has been no gain in the number of operating businesses so far this year.



Highest Level Since 1952

Retail food prices as measured by the food component of the consumer price index reached an all-time high in July at 117.4% of the 1947-49 average. The previous high was 116.6 recorded in August, 1952. Food prices account for more than 30% of the over-all cost-of-living index. They had been an important factor in holding living costs down during the three year period 1953-1955. They reached a five-year low in early 1956, but have risen 7.9% since then. Little change is anticipated in food prices in the next few months.

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Photo Courtesy U.S. Steel Products Company

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There is much more to the chemical treatment of metals than the supplying of basic chemicals. It takes a capable service organization to see that the chemicals and process systems are doing the job they were developed to do on the production line. ACP has such an organization in its Technical Service Department. This team of skilled engineers and technicians furnishes assistance in installing the process and also instructs plant personnel in its operation. Then, to keep the chemical process working smoothly with a minimum of production slowdowns, it makes periodic inspections — checks operation of process and equipment, analyzes procedures, suggests changes as needed to assure uniformly excellent results.

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Pile Hammer With Everything Built In

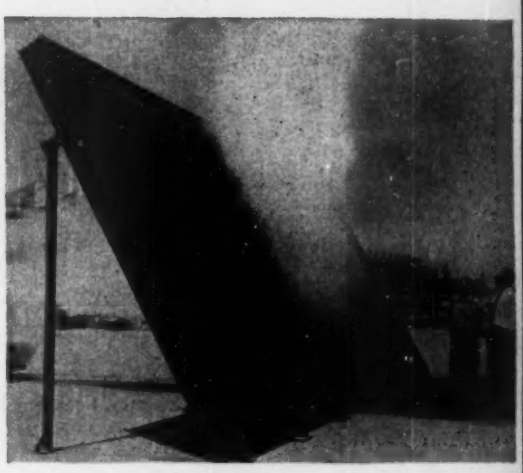
The pile hammer in the picture, manufactured by the Link-Belt Speeder Corp., a subsidiary of the Link-Belt Co., is completely self-contained. Unlike conventional air or steam hammers, it doesn't need auxiliary equipment such as compressors, boilers, high pressure hose, or fresh water supply.

To convert the crane to a pile hammer, a single cable is attached to the hammer to hoist it along the vertical guide rails in which it operates. The crane operator regulates the hammer operation with a hydraulic throttle control system operated from the cab or the ground.

To start the hammer, the ram is lifted by the single cable and dropped. As it nears the end of the down stroke, it starts a fuel pump that injects atomized fuel under high pressure into the space between the falling ram and the anvil resting against the pile. The force of the down stroke compresses and heats the air and causes an explosion. This drives the anvil down against the pile and the ram upward. When the ram reaches its closed cylinder top, air is compressed above it. The compressed air accelerates the downward stroke and lets the air strike more blows per minute than a conventional hammer. The conventional hammer has an open cylinder top that lets the ram bounce higher and fall more slowly.

The hammer comes in three models. The smallest weighs 3,600 lb. and strikes a 7,500 ft.-lb. blow. The largest weighs 12,500 lb. and has a striking force of 30,000 ft.-lb. Prices range from $8,250 to $16,500.

Fence That Tames Jet Blasts



This steel vane fence probably will become a familiar sight at both commercial and military airfields before too long. It's designed to deflect the harsh blasts belching from modern jet aircraft upward at a vertical angle. This allows jet aircraft to park safely on crowded airport runways and near maintenance shops. When a solid steel fence is used to stop these blasts, pressure pile-ups often occur at the fence and the result is a dangerous turbulence that whips debris such as bolts and stones around the area, often striking the aircraft and mechanics.

The fence is manufactured by the John Bean Div. of Food Machinery & Chemical Corp., San Jose, Calif. It comes in sections of various heights and lengths. The one pictured is 10 ft. long and 12 ft. high. The fences are made of heavy-gauge steel welded together to form vanes in a cascade arrangement. When they're set up on the field, each section is anchored to a concrete base and positioned at a 60-degree angle to the parking line so high velocity blasts will have the least chance of piling up at the fence before filtering through the vanes.

At present the fence is being used by the Air Force, but it is designed to withstand the blast of all types of military and commercial jets including multi-engine jobs that are still on the drawing boards.

Rail Car for Jumbo-Sized Cargo

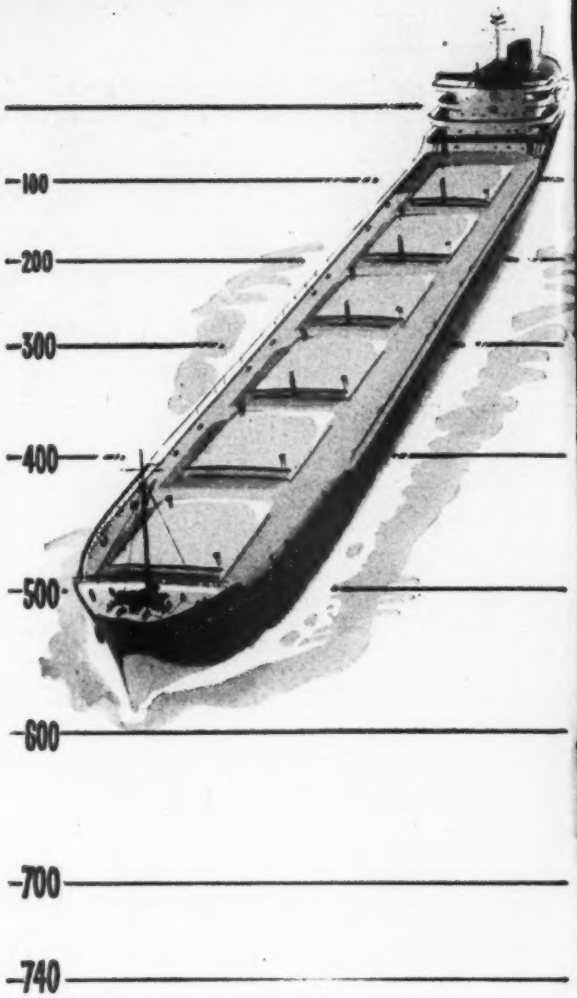
This three-part railroad car was built to handle huge cargoes that often in the past had to be dismantled for shipment. Here, it is shown hauling a 412,000-lb. autotransformer from Westinghouse's transformer plant at Sharon, Pa., to the Foster (W. Va.) power station of Ohio Power Co.

The special car was designed by Westinghouse and built by the Greenville Steel Car Co., Greenville, Pa. They used a special high strength, low alloy steel called Tri-TenE manufactured by U. S. Steel. It's lighter than ordinary carbon steel and has as high a load carrying capacity, etc.

Up to now, equipment the size of the autotransformer had to be disassembled and shipped in several flat bed cars because one car could not bear the load. The new car overcomes this problem by taking the load off the bed and supporting it on the end sections. The unit is easy to unload because it rests six in. off the rails instead of 30 in. as in the case of standard flat cars.

The car is made up of two identical end sections about 30 ft. long, with an underframe, wheel trucks and wheels, and a steel frame that is used to support the cargo. The cargo, as shown in the picture, hanging between the two end sections and supported by the steel frames, joins the ends together and is considered the third section of the car. The completely assembled unit mounted between the end sections and ready for shipment is 92 ft. long.

The Seaway, to fulfill its promise as trade link between Great Lakes and foreign ports, needs something new in ships. Existing Lake carriers (center drawing) can't take ocean waves. Big ocean-going carriers (right) can't get through Seaway locks. So ship designers have come up with a new species of ocean-Seaway carrier (left), able to traverse both locks and ocean. Though Lake carriers have the Upper Lakes ore trade pretty well sewed up, the new ships are likely to give them a run for their money on other trade.



New Ocean-Seaway Ship

It's medium length (578 ft.), narrow (72 ft.); has 25½-ft. draft, 13,000-ton capacity in Seaway, 30-ft. draft and 20,350 tons in ocean. Bridge is aft.

New Ships for Seaway to Battle

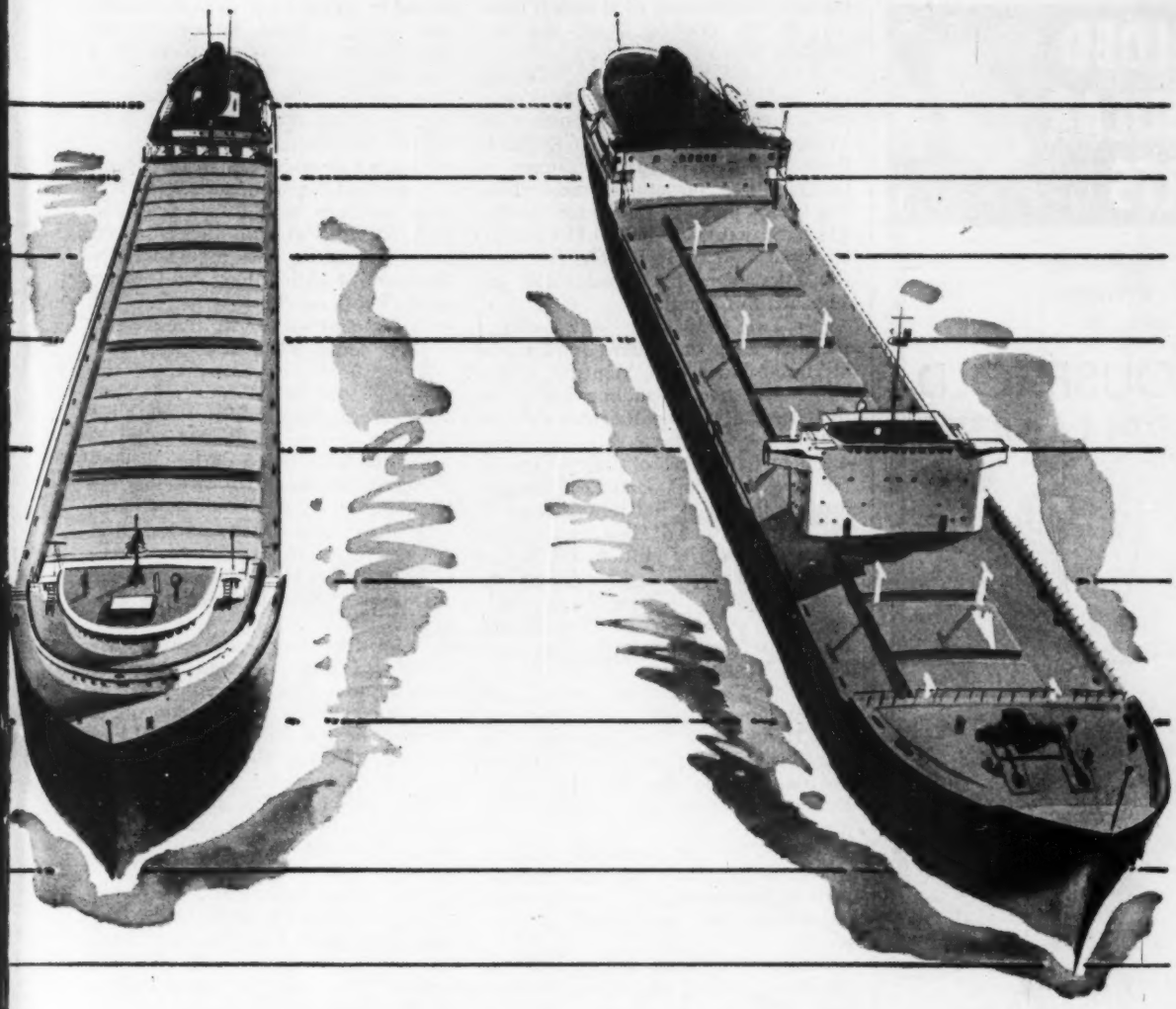
The opening of the St. Lawrence Seaway in 1959 will touch off a long, many-sided, and hotly competitive struggle to capture the new trade it will develop—and to keep trade moving along the old routes. Everybody up and down the Atlantic, the Mississippi River, and along the Great Lakes will be pulled into the fray: ports, railroads, inland barge lines, shipping lines, grain elevators, warehouses, even manufacturing facilities.

The new battle conditions will pose new problems for many of the contestants, force many to adopt new methods and forge new competitive weapons. Ship operators out for a slice of the new Seaway trade are faced with one of the biggest riddles, and to solve it, naval architects are coming up with the answer you see sketched above—a totally new species of ship.

• **Precedent**—It's not the first time that the Great Lakes have produced something new in ship design. Because of the nature of Great Lakes trade, in fact, much of what is new and exciting in ship design, and particularly in cargo handling, has grown up on the Lakes.

Many innovations born on the Lakes have been incorporated in the latest ocean-going ships, and more and more new ships coming off the ways are likely to show the influence of Lake ideas.

• **Problem**—The dilemma that now faces prospective Seaway ship operators



Great Lakes Bulk Carrier

Long, narrow, and shallow-sided (690 ft. long, 75 ft. wide, with only 25½-ft. draft), it has cargo capacity of 24,400 tons, bridge forward.

Big Ocean-Going Carrier

These are long, wide, and deep (this one is 756 ft. long, 116 ft. wide, has over 38-ft. draft, a 60,000-ton capacity); bridge is amidships.

Both Lakers and Ocean Carriers

arises from a conflict between idea and stubborn fact. Despite the attractive advance notices of the Seaway as a link between inland ports and Europe, the operation of cargo vessels through the Seaway to the Great Lakes runs up against some shoals. Biggest of these, for a shipowner, is the limitation the Seaway locks put on the size of ships.

The problem boils down to this:

• The larger, more economical ocean-going carriers can't operate inside the Seaway--or the Lakes, for that matter. Canadian and U.S. Seaway authorities have announced that they won't let through the locks any ship more than 730 ft. long, 75 ft. wide, and drawing more than 25½ ft. It's the 25½-ft. draft that effectively fences out all the larger, deep-draft ocean freighters.

• The Lake carriers, almost all of them designed to carry coal, ore, iron, grain, or limestone in bulk, and built for the kind of channels involved, can operate in the Seaway or even in the upper St. Lawrence River. But their design won't permit them to go "outside" into rough ocean waters.

• Answer—It's to solve this riddle that naval architects have come up with the new "Ocean-Seaway type" ship, able to operate both "inside" and "outside." But to meet both requirements, the new species of ship will have to sacrifice some cargo-carrying capacity.

Here are some notable examples of

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have many advantages of use in

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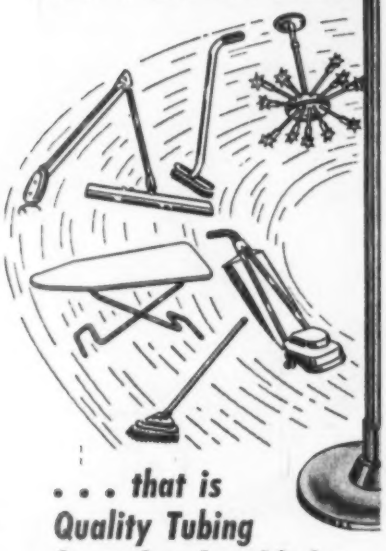

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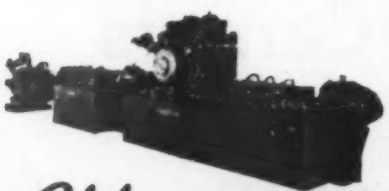

Abbey ETNA COMPANY

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the new-ocean-Seaway ships already coming off the drawing board and the building ways:

• Two 578-ft. by 72-ft. bulk carriers building for Westriver Ore Transports, Ltd., Montreal—a subsidiary of Wilson Marine Transit Co., Cleveland. Boasting a host of special features to facilitate lake operations, these ships will be able to carry 13,000 tons at the 25½-ft. Seaway draft and 20,350 tons at an ocean draft of 30 ft. The first one, the Alexander T. Wood, will be launched this month.

• Two 460½-ft. by 56-ft. package freighters built or building for Canada Steamship Lines, Ltd., Montreal. Combining the freight-handling ability of the Canadian package freighter with an ocean-going hull, these ships can carry 4,000 to 5,000 tons of cargo. One of the two, the Fort Henry, is already working the Lakes, but its size keeps it out of the present St. Lawrence canals.

• A 709-ft. by 74-ft. American-flag tramp freighter designed for Grainfleet, Inc. Still in the talking stage, the coal, ore, grain, or oil carrier best spotlights the limits to which a ship designer is held in designing for the Seaway. It would carry 16,000 tons "inside" and 27,500 tons "outside." Its designer—J. J. Henry, Inc., New York—says it is just about as long and deep as a ship can be if it's to squeeze through the locks and not run into stability problems.

• **Stake**—The new ocean-Seaway ships will be battling for a big stake, though part of the prospective Seaway trade has already been pre-empted by others.

Estimates of the amount of trade the Seaway will attract vary all over the lot from 30-million to 50-million tons a year—anywhere from three to five times present traffic. But it's generally agreed that bulk cargoes—ore, grain, oil, coal—will make up over 80% of the trade. The Seaway, in fact, will be dominated by two kinds of cargoes—Canadian and U.S. grain moving overseas (7-million to 12-million tons), and Labrador ore moving toward the Lakes (8-million to 20-million tons).

General cargo—what the public, importers and exporters, and ocean ship lines usually think of first in connection with a new trade route—will come to barely one-fifth of the expected total (6-million to 11-million tons).

• **Getting the Jump**—European lines—some 20 of them managed to slip ships into the Lakes last year through present shallow-draft St. Lawrence locks—have already gathered in all the U.S. general cargo moving overseas from the Gerat Lakes. They are expected to hold onto it, even though the Maritime Administration will subsidize U.S. operations on the Lakes to some extent.

The general cargo business isn't expected to generate any ships of radically new design. Most European cargo ships—about 71% of them—are of a size that fits the Seaway locks. U.S. ships run a little bigger, but some existing types and others on the drawing boards can squeeze through.

• **Bigger Lakers**—So far, all the designing and building of ocean-Seaway type ships has been on the Canadian side. U.S. operators of bulk carriers on the Lakes are sticking with their Lake-type ships—and building more and bigger ones. The Lake Superior ore run will probably continue to be the preserve of these conventional "Upper Lakers."

These boats are primarily ore carriers—and one reason the U.S. companies are sticking by them is that the predicted demise of the Mesabi ore bodies has been staved off by discovery of successful means of utilizing the Mesabi's vast reserves of low-grade ores, such as taconite. Much of this fleet belongs to the steel and iron giants—with the biggest U.S. fleet on the Lakes owned by Pittsburgh Steamship Div. of U.S. Steel.

These ships—long, narrow, and shallow-drafted, with just enough bow and stern so they can be pointed in the right direction—can carry a tremendous amount of cargo, 20,000 to 25,000 tons per trip. Because they are always in a hurry to beat the freeze-up, their loading and unloading operations are an efficiency expert's dream. The big ore boats can load in four hours, unload in six.

Their major limitation is that they can't operate on the ocean; their long and narrow hulls don't have the depth necessary to withstand the bending stresses they would encounter from the longer ocean waves. But on the Lakes they have no peer as regards capacity. And the bigger they are, the better—because their main job is to get enough ore down the Lakes during the summer months to last the steel mills the year round. For this job, the fact that they can't go outside the Seaway is of lesser concern.

So some companies are building new Lake-type boats that will be among the biggest yet. Among them are Interlake Steamship Co. (two ships), Northwestern Mutual Life Insurance Co. (for Columbia Transportation Co.), and Bethlehem Steel.

• **Battleground**—Though the new dual purpose ocean-Seaway carriers yield to the Upper Lakers in capacity, they have the advantage on another score. While the Lake boats are laid up during the winter freeze-over, the new carriers can be plying the ocean.

The new ships will also put in a strong bid for the Labrador ore run from Seven Islands, Que., to the Great Lakes—and that's where the Upper Lakers will have to prove their vaunted

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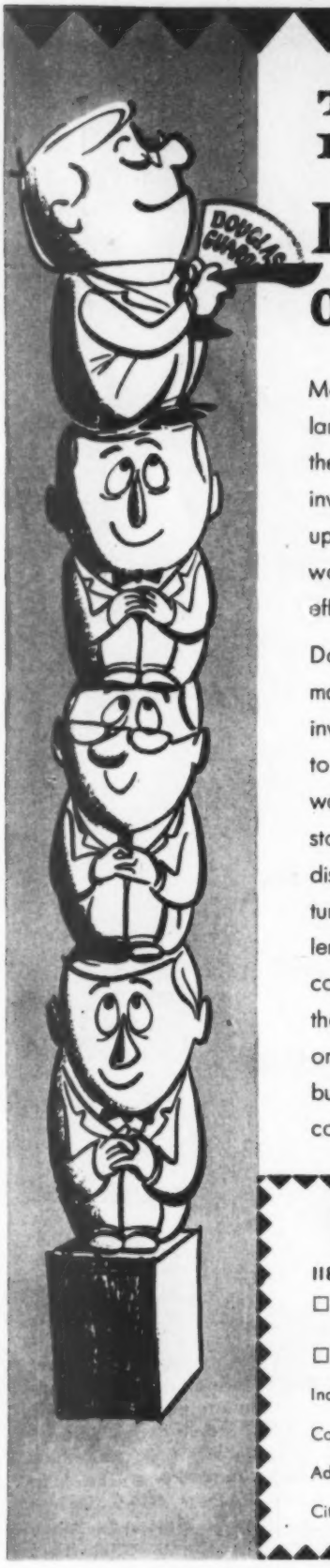

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efficiency to survive in the long run.

Proponents of the Lake boats say they will. They say the new bigger Upper Lakers can carry 25% more than the ocean-Seaway type, at the same initial cost. They don't think the new boats' winter earnings will offset a smaller summer take. But they admit that if the new Seaway ships can get enough firm contracts to operate steadily at capacity, the new type just might turn out to be more profitable.

• **What They're Like**—Judging from Westriver's new Seaway-type bulk carrier, the Alexander T. Wood, and its sister ship, being built by Canadian Vickers Ltd., Montreal, these new dual-purpose carriers will be radically different from anything seen on the Lakes up to now. They will look more like a brand-new ocean bulk carrier than an existing Lake boat. But they will have the rapid ballasting and unballasting systems needed to get under Lake port loading spouts.

Highlights of this new kind of ship are:

A variable propeller. This will permit manuevering on the propeller rather than on the engine. Tailored for plenty of stopping and starting, variable pitch propellers have so far been used mostly on ice breakers.

Navigating bridge aft. The advantages from a cargo-handling point of view of moving bridge, accommodations, and machinery aft have been touted for years, but the idea is just coming into vogue now.

Ocean-going fuel and water supplies. Lake boat runs are comparatively short, so refueling is no problem, and lake water is right at hand.

• **Package Type**—The package freighters building for Canada Steamship Lines, although they can go outside, are primarily designed for operating on the Lakes. Their major significance in ship design is the lesson they teach in efficient cargo handling.

Designed for Canada Steamship's round-robin freight service between Great Lakes points and Montreal, these ships will fit into one of the slickest integrated package freight services anywhere. As early as 1936, CSL threw away the traditional mast and boom approach to cargo handling for a palletized, fork-truck operation.

All CSL package freighters have side ports. Through these doorways, cut into the side of the hull, hand trucks loaded with palletized cargo are towed directly into the 'tween deck space of the vessels. The freight is stowed away by fork-lift trucks, aided by an elevator in the hold.

Until now, CSL package freighters have been equipped for the smaller freshwater tidal range, and for side port landings. The new Seaway prototypes follow the same pattern, somewhat sharpened:

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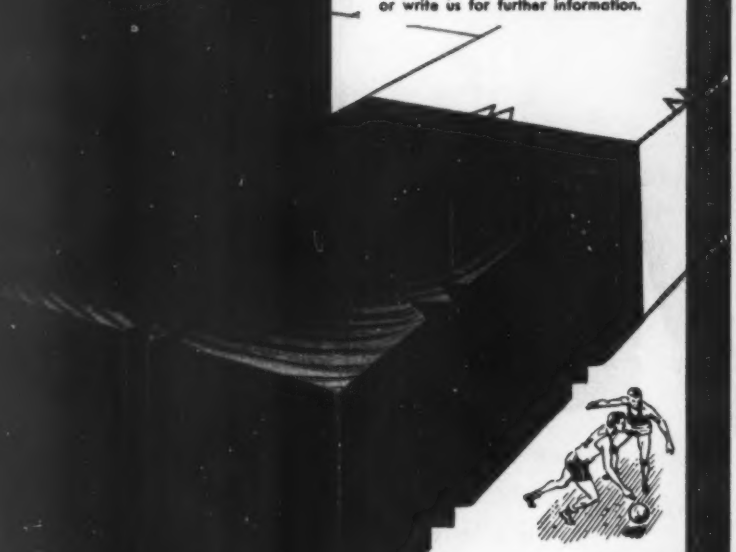
So, to find out why these floors provide every important requirement you need for your flooring, write for a Jennison-Wright representative to call on you with all the facts or write us for further information.



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*Made of Kiln Dried End Grain Southern Yellow Pine Wood Block in Natural Color

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• Each has four high-speed elevators of a new type.

• Package freight is carried on the 'tween deck and tank top. And on the top deck, the popular cargo this summer has been automobiles.

• The entire interior cargo space is free of stanchions. An extra long hatch in the deck allows for carrying steel girders of maximum size. The ships can also switch to grain.

These CSL ships also have ocean-type deck hatches, and are being equipped to add mast and boom (derrick)—should CSL decide to send them outside for the winter.

"We can't tell yet whether it will pay us to leave the Seaway early enough to fit up with cranes for the ocean run each winter," says Richard Lowery, CSL's shipbuilding head. "But by building these ships to ocean specifications, we're putting ourselves in a position where we can decide later on."

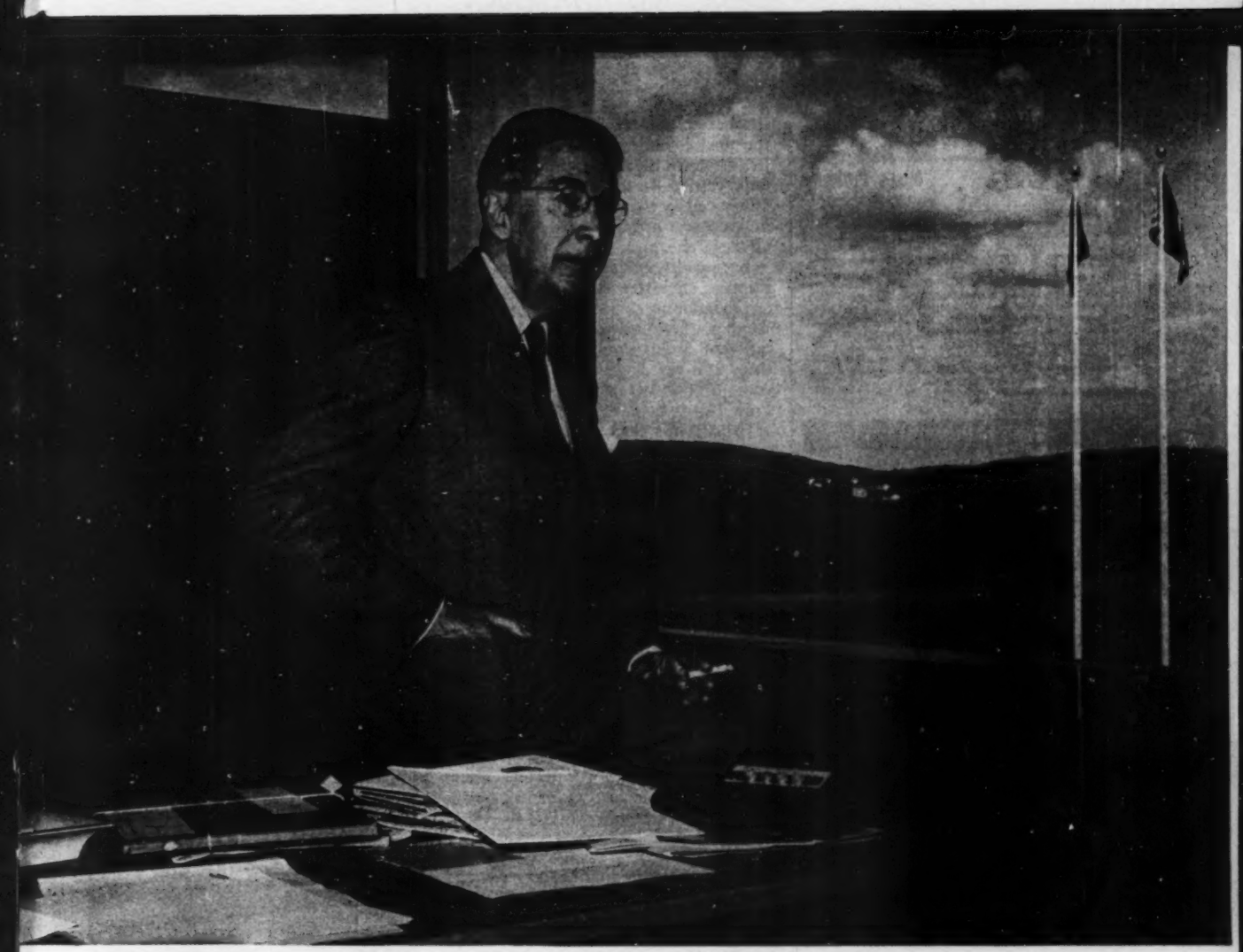
• **Forerunner**—In many ways, the most interesting ship designed for the Seaway is the one Grainfleet, Inc., proposes to build if it gets a Maritime Administration construction subsidy.

If the subsidy is granted, Grainfleet plans to use the ship to carry grain from the Great Lakes to the Middle East. On the return, the ship would carry oil to Europe, then head back to the Lakes empty, cleaning its cargo tanks as it crossed the Atlantic.

This grain-oil carrier could be the forerunner of a new kind of tramp

Sculptress at Work

Mrs. June Black of Akron has perhaps the most unusual job in the tire industry. She's a tire sculptress for Firestone Tire & Rubber Co. By modeling the tire treads in clay, to the hundredth of an inch, she enables engineers to visualize the design and make alterations before production.



What Helps Securities Sell?

Allerton C. Hickmott, Vice President, Connecticut General Life Insurance Company, says:

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steamer—a bulk tramp carrier. This is the next logical step in the worldwide trend toward more and more specialized bulk carriers—a trend that was greatly influenced by the success of Great Lakes bulk carriers in moving large quantities of cargo cheaply.

• **Saving**—Except along the Lakes, the shipping industry has been very shy of abandoning time-tested cargo-handling methods, which are basically no different from those used on sailing ships 100 years ago. One of the more vocal proponents of change, Associate Prof. Harry Benford, of the University of Michigan's School of Naval Architecture, has pointed out that there is more to be gained from improved cargo handling than from atomic power. He points out that cargo-handling costs make up a third of a general cargo ship's operating expense, with fuel costs only about 12%.

Owners of the big Upper Lakers feel seagoing bulk carriers can learn a few economy lessons from their freshwater counterparts, too. For instance, lake hatch covers are handled entirely by the ship's crew, between the time the vessel passes the harbor light and the time it reaches the dock. On the George M. Humphrey, the combination of quick-acting clamps and a traveling crane makes it possible for two or three men to open all 19 hatches in less than half an hour.

PRODUCTION BRIEFS

A $20-million potash mine in Esterhazy, Saskatchewan, is being planned by International Minerals & Chemical Corp. of Chicago. Utah Construction Co. of San Francisco has the contract for the mine shaft and surface structures on a 450,000-acre tract.

•

A race for an Air Force contract spurred Lockheed Aircraft Corp. to bring a 10-passenger utility jet transport from drawing board to finished prototype in the record time of 30 weeks. The plane, designed to fly 500 mph., is powered by two British Bristol Orpheus engines in pods near the tail. A second prototype of the swept-wing jet, scheduled to come out early next year, will carry four General Electric J-85 or Fairchild J-83 engines.

•

Architects and engineers who want to design earthquake resistance into buildings (BW—Aug.17'57,p68) can take advantage of a bibliography newly compiled by the American Institute of Steel Construction. It lists publications on seismology, earthquake data, engineering applications of this information, building codes, insurance codes, and other useful references.

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A Time for Searching Appraisal

The smashing victory of William Proxmire—the first Democrat to be sent by Wisconsin voters to the U.S. Senate since 1932—illuminated, like a flash of lightning, a trend among voters. This is something that had been less dramatically evident throughout the Congressional session: a growing disquietude in the nation over the drift of both domestic and international events.

It is rarely possible to be certain of the meaning of a particular election. Undoubtedly young Sen. Proxmire earned his victory partly by his (and his attractive wife's) tireless campaigning. Nevertheless, the Wisconsin election appears to confirm other signs of a national discontent. Among these are national defense (the Russian announcement of its successful launching of an intercontinental ballistic missile broke just before the election), and farm policy (in some traditionally Republican counties, Wisconsin farmers voted 4 to 1 for Proxmire). The Administration's monetary and economic policies apparently were blamed for increasing interest rates and checking economic growth—without checking the rising cost of living. Some Wisconsin voters balked at heavy spending and foreign aid that did not seem to have paid off.

Obviously, there are many contradictory elements in such a bill of indictment—and the Democrats have certainly not been above working both sides of the street against their opponents. Simultaneously, the opposition has been charging the Administration with policies too conservative and too liberal; too inflationary and too deflationary; too bold in military and foreign affairs and too timid.

Contradictory or not, these findings probably reflect widely held attitudes. The dissatisfaction must force the Administration and the leaders of both parties to a full examination. Both must appraise what's wrong with national policies and what can be done to improve the national morale.

The voters, as we read the Wisconsin election, are calling for an end to smugness and to the repetition of stale formulas in Washington. They are in search of candidates who will propose vigorous and imaginative programs for strengthening the nation's economy and defenses.

Roll Up Your Sleeves

Health authorities are flatly predicting that an epidemic of Asian flu will hit the U.S. hard early this fall. How bad it will be depends almost entirely upon how many people we can get immunized beforehand. Schools, clinics, municipal and state agencies, and private physicians are already engaged in mass inoculation programs. But one large group is not easily reached by these programs. That is the nation's industrial employees.

Many companies, fearful of absenteeism because of the flu, concerned about the effect of its contagion on plant operations, are offering anti-flu vaccinations through plant medical departments and dispensaries. Such an undertaking is costly and raises a number of awkward problems (BW—Aug. 31'57,p27). But it seems, nevertheless, very much worth doing. Not only is it prudent operational planning, but it makes a meaningful private-enterprise contribution to the general welfare. There can never be a surplus of such efforts.

New Nations

Last week, in Kuala Lumpur, ceremonies were held to celebrate the birth of a new nation, the Free and United Federation of Malaya—ending the era of British and Western European colonial rule over nations on the mainland of Asia.

Halfway round the world in Lagos, Nigeria, other ceremonies hailed the installation of the first all-African cabinet of the Nigerian Federation—marking the beginning of the end of another British colony.

Said the new Malayan Prime Minister, Prince Abdul Rahman, "Britain will ever find in us her best friend." And, said the new Nigerian Prime Minister, Alhaii A. Tafawa Balewa, British statesmanship was responsible for his country's great opportunity to enjoy "a happy association of tremendous good will on both sides."

In contrast, in Algeria, bitter civil war rages on between the French and the Arabs. The French national spirit—and the French economy—go on ebbing away; and Algerian bitterness rises. Meanwhile, the Communist threat hovers over North Africa.

We think the British—as they did in Ghana and India—have set examples that the French might well study.

Inflation Takes a Breather

Our troublesome case of creeping inflation seems to have been arrested, at least temporarily. The cost-of-living index, which reached a new record high last month, isn't likely to move much, one way or the other, for the next several months (BW—Aug.24'57,p19).

It is still too early to determine whether this standstill has any real long-run significance.

Such a breather must, nevertheless, be welcome to businessmen on at least two counts:

Wage escalation on the cost-of-living formula will lose force, making costs easier to figure.

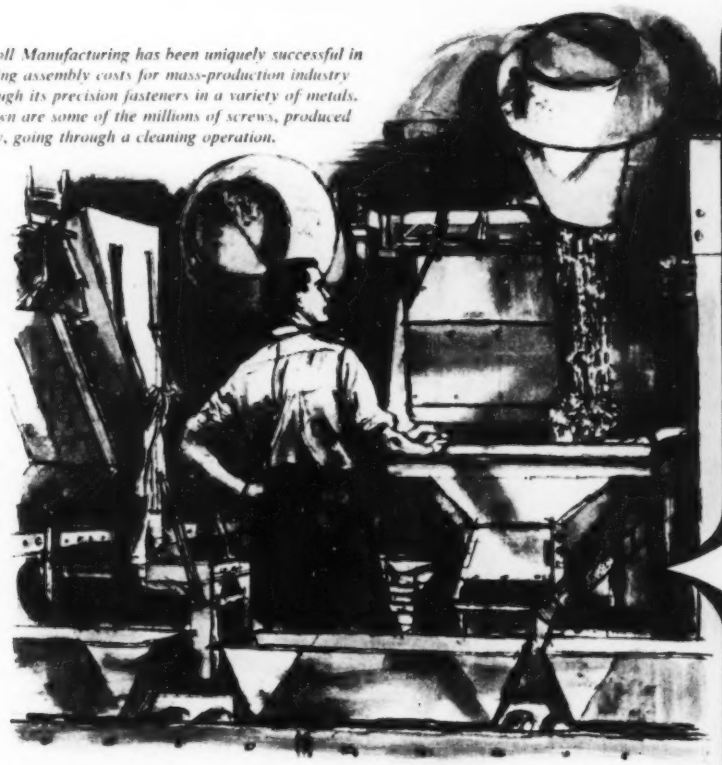
Congressional probing into the causes of inflation will lose its point, salving a business irritant.

Correct Lubrication in Action...

sharp cut in machine overhauls SAVES $31,590

Here's how Pheoll Manufacturing Company is reducing maintenance costs with the help of Socony Mobil

Pheoll Manufacturing has been uniquely successful in cutting assembly costs for mass-production industry through its precision fasteners in a variety of metals. Shown are some of the millions of screws, produced daily, going through a cleaning operation.



1,607 machines of various types and sizes are used to turn out the unique fasteners produced by the Pheoll Manufacturing Company. Last year 58,500 man-hours were spent on servicing and overhauling these machines. This year only 44,460 man-hours did the job despite the addition of 56 new machines. Here's why:

Mobil engineers worked closely with plant personnel to set up new and more efficient preventive maintenance procedures. A lubrication department was created . . . charts specifying types of lubricants and application frequency were prepared for every machine.

Result: Overhauls were minimized to such a point that maintenance time was cut 24%. Maintenance savings amounted to $31,590 in one year.

Here is but one of the many savings made by Pheoll through Mobil Correct Lubrication . . . the only program that combines top-quality products with 91 years of lubrication experience and complete engineering service. Why accept anything less?

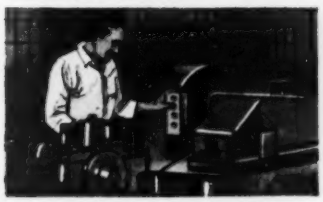
Other ways **Socony Mobil** *has helped cut costs*

Oil consumption on headers cut 36%

When Pheoll converted header machines to motorized drive, increased speed caused rapid wear of ways. Mobil recommended more suitable way lubricant with improved load-carrying capacity. It permitted sustained high-speed operation . . . reduced oil consumption 36% . . . resulted in up to 8 pieces per minute production increase.

50% of purchased oil reclaimed

Under Mobil program of Correct Lubrication lubricants are drained from machines with reservoirs, then purified and reused. This method returns to use over half of oil purchased each month.



Will save $7,100 on oil handling

Mobil engineers working closely with Plant Engineer are helping set up new storage and handling facilities . . . improving buying and inventory procedure. With bulk purchase savings, this will cut costs more than $7,100.

Leader in lubrication for over 91 years

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A proved program to reduce maintenance costs

SOCONY MOBIL OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP., MOBIL OVERSEAS OIL CO., INC.

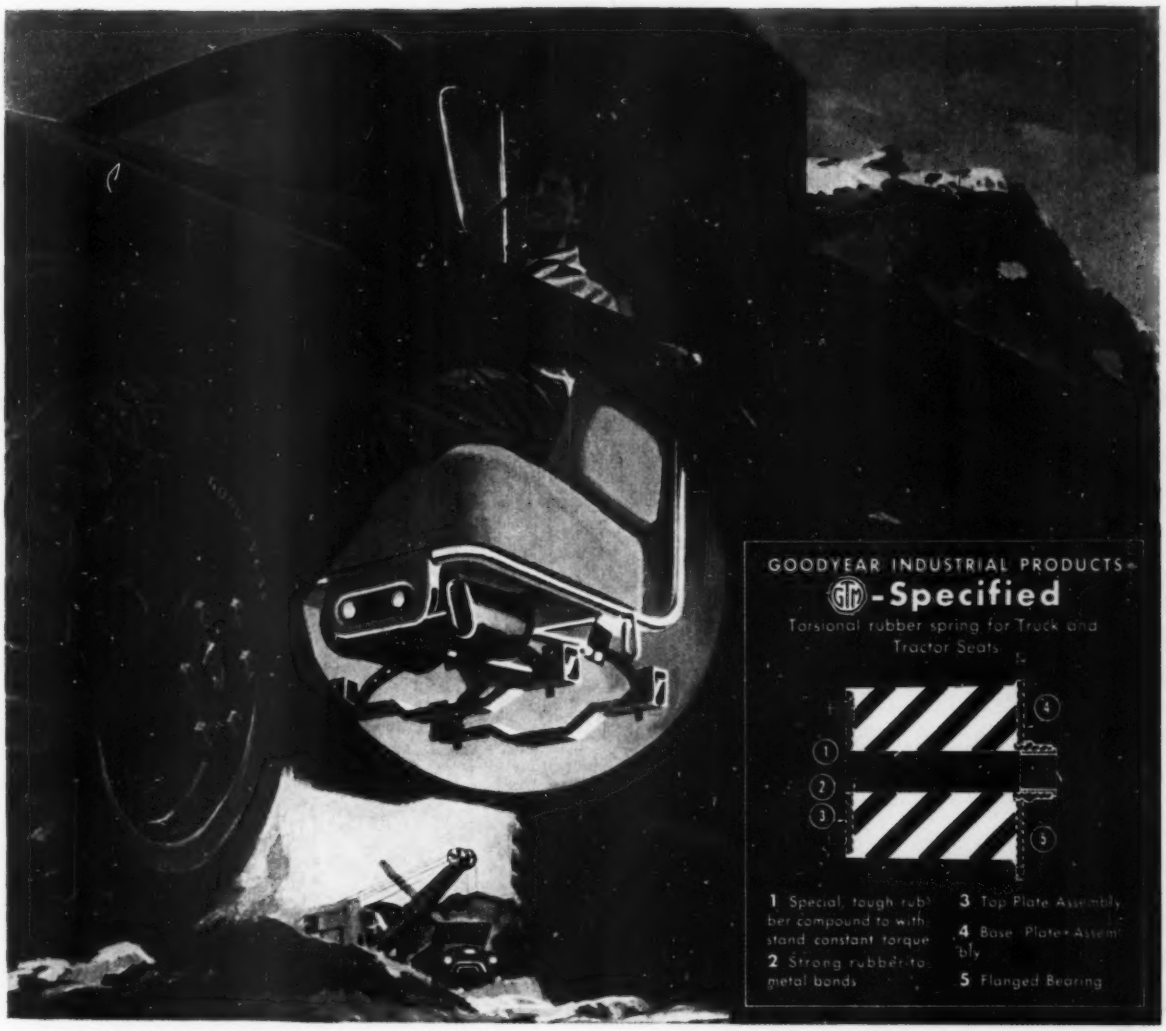
GOODYEAR INDUSTRIAL PRODUCTS
G.T.M.-Specified
Torsional rubber spring for Truck and Tractor Seats
1 Special, tough rubber compound to withstand constant torque
2 Strong rubber-to-metal bonds
3 Top Plate Assembly
4 Base Plate Assembly
5 Flanged Bearing

Illustration courtesy of Bostrom Manufacturing Company, Milwaukee, Wisconsin

Now—the Rough Riders can take it easy

How to gentle a rough ride was long a problem to both truck and tractor manufacturers. But today, passenger car comfort has been achieved. And most of the credit goes to a unique seat suspension system.

The system's success lies in a set of torsional rubber springs developed with the close help of the G.T.M.—Goodyear Technical Man. These husky cylinders are especially compounded and precision-molded, then mounted under torsion to level out vibrations five times as effectively as conventional springs. They work efficiently despite rough usage and climatic changes—last the life of the vehicle.

If you have a problem that might possibly be solved by molded or extruded industrial rubber, it will pay you to see the G.T.M. His broad experience in getting the most out of rubber has resulted in an endless stream of improved seals, gaskets, rolls, bumpers, engine mounts, diaphragms and other conventional parts plus many completely new useful products.

You can benefit from G.T.M.'s experience, simply by writing and asking for his help. The address: Goodyear, Industrial Products Division, St. Marys, Ohio, Los Angeles 54, California, or Akron 16, Ohio.

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GOODYEAR

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